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THIRTY-SEVENTH ANNUAL REPORT  
OF THE  
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**State Board of Health**  
OF  
**SOUTH CAROLINA**  
FOR THE  
**Fiscal Year, 1916**  
TO THE  
**LEGISLATURE OF SOUTH CAROLINA**



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**STATE DOCUMENTS**

COLUMBIA, S. C.

GONZALES & BRYAN, STATE PRINTERS,  
1917.

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## LETTER OF TRANSMITTAL.

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CHARLESTON, S. C., December 21st, 1916.

*His Excellency Richard I. Manning, Governor, Columbia, S. C.*

Sir: I have the honor to submit for your consideration the Thirty-seventh Annual Report of the Executive Committee of the State Board of Health.

Your attention is directed especially to the very marked improvement in health conditions generally. While there has been a moderate increase in the prevalence of scarlet fever and measles, the total number of deaths from diphtheria, measles, scarlet fever, cerebro-spinal meningitis, typhoid fever, smallpox, whooping cough, tuberculosis and pellagra combined was less than in 1915 by 1,025. This saving of life can be attributed directly to the watchful guardianship of the State Health Officer and his co-workers and furnishes the strongest possible argument for continued and liberal support. A most instructive illustration of what can be accomplished by intensive work is afforded by the results obtained by Dr. Howell in Florence County and Dr. Routh in Laurens County. The State Health Officer reports that when Dr. Howell began work in the district to which he was assigned, of 141 families, 46 had open back unsanitary privies and 95 had no privies at all. When he left, 136 of these families had constructed sanitary privies and so protected themselves against typhoid fever and hookworm. This community unit work by which sanitary instruction is carried directly to the individual can be made of immense value to the county residents and we earnestly trust that a sufficient appropriation will be made for its extension.

One of the most serious sanitary problems which confronts us is malaria and that section of the report which refers to this destructive disease should receive most careful consideration. Our knowledge of the cause of malaria and its mode of propagation is definite and the State Board of Health should receive ample support to enable it to carry on an extensive campaign of education, for undoubtedly a great deal could be accomplished if the simple means of prevention were clearly understood.

It is very gratifying to call to your attention the success of the South Carolina Sanatorium for the treatment of tuberculosis.



Both the building for men and the new building for women, which was opened on August 16th, 1916, are full, and patients are waiting for admission. From an economic point of view there is no institution more deserving of support. Money spent in maintaining a sanatorium for the cure of tuberculosis is money invested at a high rate of interest. This terrible and fatal disease attacks men and women in the prime of life and usefulness, producing often a long period of incapacity, which in those cases where the victim is the breadwinner, results in untold poverty and distress. In the beginning, tuberculosis is curable, and it is the aim of the Sanatorium to take care of these early cases and by effecting a cure to convert the expensive consumer and dependent into a useful producer. We most earnestly plead for abundant means to carry on this most beneficent and useful work.

It is a subject for congratulation that the success of the Vital Statistics Bureau has brought South Carolina into the registration area of the United States and given our reports a value which they have never possessed in the past.

Respectfully,

ROBERT WILSON, JR.,

Chairman Executive Committee State Board of Health.

## GENERAL REPORT.

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This is the Thirty-seventh Annual Report of the Executive Committee of the State Board of Health, and is for the year ending December 31st, 1916.

This report is made in compliance with the following Concurrent Resolution, which directs that the "Reports of the Departments of the State Government, and every officer required by law to be made to the General Assembly, or to any officer, the printing of which is to be charged to the State, shall contain only a concise statement of the transactions of the officer of department, without repetition, and a concise statement of recommendations, and no proposed measure or copy of law, or copy of any other report or document, except such as the production of which shall be necessary, shall be printed at the expense of the State," etc.

### EXECUTIVE COMMITTEE STATE BOARD OF HEALTH.

Robt. Wilson, Jr., M. D., Chairman.....	Charleston
D. B. Frontis, M. D.....	Ridge Spring
C. C. Gambrell, M. D.....	Abbeville
E. A. Hines, M. D.....	Seneca
W. J. Burdell, M. D.....	Lugoff
Wm. Egleston, M. D.....	Hartsville
W. M. Lester, M. D.....	Columbia
W. W. Dodson, M. D.....	Greenville
Thos. H. Peeples, Attorney General.....	Columbia
C. W. Sawyer, Comptroller General.....	Columbia
Jas. A. Hayne, M. D., Sec'y and State Health Officer...	Columbia

### STAFF OF SOUTH CAROLINA DEPARTMENT OF HEALTH—EXECUTIVE DEPARTMENT.

Jas. A. Hayne, M. D., State Health Officer and Executive Officer of State Board of Health.....	Columbia
L. A. Riser, M. D., Director of Rural Community Units	Columbia
J. T. Howell, M. D., Agent State Board of Health for Com- munity Work.	



F. M. Routh, M. D., Agent State Board of Health for Community Work.

Clerk .....	Columbia
Janitor .....	Columbia

#### LABORATORY DEPARTMENT.

F. A. Coward, M. D., Director .....	Columbia
Jas. R. Cain, Assistant Bacteriologist .....	Columbia
F. L. Parker, M. D., Chemist and Bacteriologist .....	Charleston
Stenographer .....	Columbia

#### BUREAU OF VITAL STATISTICS.

C. W. Miller, Chief Clerk .....	Columbia
Filing Clerk .....	Columbia
Stenographer .....	Columbia

#### MEETINGS.

The Executive Committee of the State Board of Health, in addition to its regular quarterly meetings, held two special meetings. The sub-committees, which has charge of the affairs of the South Carolina Sanatorium at State Park, met twice. The personnel of this committee is as follows:

Robt. Wilson, Jr., M. D., Chairman .....	Charleston
Jas. A. Hayne, M. D., Secretary .....	Columbia
C. C. Gambrell, M. D. ....	Abbeville
W. J. Burdell, M. D. ....	Lugoff
Wm. Eggleston, M. D. ....	Hartsville

#### THE BOARD'S QUARTERS.

The Laboratory has well arranged rooms furnished by the University of South Carolina, steam-heated and comfortable.

The Bureau of Vital Statistics also occupies, through the courtesy of the University of South Carolina, comfortable quarters in LeConte College.

The Executive Department of the State Board of Health occupies rooms on the fifth floor of the Palmetto Bank Building.

#### MISCELLANEOUS.

As the establishment of the Bureau of Vital Statistics gives us efficient bookkeeping of health conditions in South Carolina, we

are able to report that this year we have definitely reduced the number of deaths from contagious diseases in South Carolina. Our figures show that the deaths from diphtheria for ten months in 1915 were 75; in 1916, 59. Measles show an increase from four to ten deaths. This does not, however, accurately represent the number of deaths caused from measles, for from measles we have broncho-pneumonia, and as a result often tuberculosis. Cerebro-spinal meningitis in 1915, 49 deaths; in 1916, 20 deaths. Pellagra, in 1915, 1,305 deaths; in 1916, 553. This is a great reduction in this disease, about whose origin and treatment there has been so much medical argument. We promised the Legislature that if they would give us the funds we would show them results in this disease, and as we were willing to take the blame if the number of deaths had increased, we think we should have credit for the decrease of deaths from this disease. Scarlet fever, in 1915, 7 deaths; in 1916, 10 deaths. Here, again, we have an increase in the number of deaths, and we must remind the Legislature that this is a constant warfare, and that at times the enemy will gain certain ground, but that we are holding our lines firmly and driving constantly into the enemy's territory. Smallpox, in 1915, 2 deaths; in 1916, 2 deaths. We have rendered this disease a negligible factor in the death rate in South Carolina, by insisting that vaccination is the only protection. Pulmonary tuberculosis, in 1915, 1,735 deaths; in 1916, 1,377. Against this disease, the king of all diseases, we are waging a winning fight.

The South Carolina Sanatorium is a flourishing institution now. It is filled to its capacity and we have a long waiting list. Two counties have excellent camps for the treatment of this disease; namely, Greenville County and Richland County. Typhoid fever, in 1915, 474 deaths; in 1916, 413 deaths. The constant preaching of the necessity for decent living in rural districts, with proper disposal of human excreta, is responsible for this lessening of the typhoid death rate. Whooping-cough, in 1915, 193 deaths; in 1916, 123 deaths.

To recapitulate the deaths in 1915 from diphtheria, measles, pellagra, cerebro-spinal meningitis, scarlet fever, smallpox, pulmonary tuberculosis, and other forms of tuberculosis, typhoid fever and whooping-cough, were 3,937 in 1915, and 2,915 in 1916, showing a difference of 1,022 less deaths, and these deaths we claim the State Board of Health has prevented, for the list of diseases given are distinctly the preventable diseases.



If each individual who died was worth \$500 to the State, then by saving the lives of 1,022 people the State Board of Health has saved the State in actual money \$511,000 on a total appropriation of \$55,575.25. We ask you legislators if that is not a splendid investment of the State's money. Aside from all sentiment and putting the matter simply as a business transaction, we think that the State should invest more money in this business next year.

We are very proud of our three departments; namely, the Laboratory, the Rural Sanitation Department and the Vital Statistics Department. In this volume a full report from the head of each department will be found, which will repay a legislator if he will read them.

Our great President, of whom every South Carolinian should be proud, has said in regard to tuberculosis:

"Experts state that one-half of all who die between the ages of 18 and 45 are victims of tuberculosis, but no repetition of figures, no emphasis of speech, no words of warning, can add to the horror and terror and responsibility which, in the public mind, attach to the gruesome devastation of this disease. People, public and private, who do not perform every act within their power to check this scourge are almost guilty of negative murder."

This year we are asking the Legislature for a proper support of our work against the great white plague, by giving us sufficient appropriation to carry on the work being done at State Park.

### BULLETINS.

The following bulletins have been issued by this department and sent out all over the State:

Anterior Poliomyelitis (Infantile Paralysis).

Baby Welfare.

Cancer.

Clean Milk in the Home.

Clean-Up Day.

Diphtheria.

Epidemic Cerebro-spinal Meningitis.

Hookworm.

House Fly.

Measles.

Medical Inspection of Schools.

Pellagra.

Rabies (Hydrophobia).

Sanitation in Small Towns.

Scarlet Fever.

Smallpox.

The Mosquito.

The Safe Disposal of Human Excreta.

Tuberculosis.

Typhoid Fever.

Whooping-Cough.

These bulletins have been widely circulated and have done good work.

We are much handicapped in the control of diseases, and the clerical work involved upon this office by the ever-increasing demands to all kind of inquiries; the people of the State are waking up to the need of sanitation and this office is the place where they should get their information, but our clerical force, consisting of one lady, is inadequate for the task.

This lady is only paid the meager sum of \$60 per month, and has given ten to twelve hours per day to the performance of the work of the office. She has faithfully served the board since 1907, and it was recommended, without request on her part or our part, by the State Auditor, that she should be given at least \$1,000 for her services, and we earnestly request that this be done this year.

## EPIDEMIC DISEASES.

The only epidemic of any importance that has occurred in this State this year has been that of infantile paralysis, and every effort of the Board was used to check this disease and we believe that much was done towards preventing its spread. As I have shown previously, the other preventable diseases have been successfully fought. Last year only two cases of this disease were reported to this office, and this year, up to the first of December, there have been 123 cases reported. Some authorities say that there will probably be a severe epidemic of this disease next year in the States where it was not widely prevalent this year. Let us be ready to fight this disease, and to do so we must have money; so, in making up the budget for the coming year, we have asked for an increase in the appropriation for the suppression of contagious diseases. We are still endeavoring to get the physicians to report contagious diseases, but with little success.

Gentlemen of the Legislature, you must devise some bill that will enable the health authorities to know where the diseases exist



or we cannot fight the diseases. We have accurate reports of deaths, but it is then too late to institute measures to prevent the spread of contagious diseases. The following is the form of postal cards sent out with appended list of reportable diseases:

.....191.....

Disease or suspected disease.....

Patient's name.....Age.....Sex.....Color.....

Patient's address.....Occupation.....

School attended or place of employment.....

Number in household: Adults.....Children.....

Probable source of infection or origin of disease.....

If disease is smallpox, type.....number of times  
successfully vaccinated and approximate dates.....

.....

If typhoid fever, scarlet fever, diphtheria, or septic sore throat,  
was patient, or is any member of household engaged in the  
production or handling of milk.....

Signature of physician.....

Address of reporting physician.....

(Reverse of Card)

SECRETARY STATE BOARD OF HEALTH,  
COLUMBIA, S. C.

The following diseases are required by the State Board of Health to be reported to the Secretary on cards furnished for that purpose:

*Infectious Diseases*—Diphtheria, German Measles, Leprosy, Malaria, Measles, Meningitis (epidemic cerebro-spinal), Ophthalmia Neonatorum (conjunctivitis of new-born infants), Pneumonia (acute lobar), Poliomyelitis (acute infectious), Scarlet Fever, Septic Sore Throat, Smallpox, Trachoma, Tuberculosis, Typhoid Fever, Whooping-Cough.

*Diseases of Unknown Origin*—Cancer, Pellagra.

JAMES A. HAYNE, M. D.,

Secretary State Board of Health and State Health Officer.  
Columbia, S. C.

We send to each physician a number of postal cards with everything printed on the card, except the data we cannot give, and ask them to fill in these cards and return them to us, and this surely is not asking too much of a physician.

## FOOD AND DRUGS.

The examination of food for sale is still carried on by the Department of Agriculture, Commerce and Industries, and the work is being well done. The Federal Government, by its rigid enforcement of the Harrison Anti-Narcotic Law, has almost stopped the sale of morphine and cocaine in this State, except when properly used; but we regret to say that the sale of worthless nostrums containing large amounts of alcohol still continues. If we are to have prohibition, let us be consistent and do away with the patent medicine evil as well as whisky.

A REPORT BY JAMES A. HAYNE, M. D., STATE  
HEALTH OFFICER, ON EPIDEMIC AND CONTAGIOUS  
DISEASES OCCURRING IN SOUTH CAROLINA DURING 1916.

## SMALLPOX.

The campaign that has been waged against this disease since it made its appearance in 1899 and 1900, and grew to the proportions of an epidemic in 1905 and 1906, when it was estimated that at one time there were 15,000 cases in South Carolina, is one of the most striking proofs of the efficacy of pursuing an intelligent method in dealing with the disease. We know that vaccination will prevent smallpox, and our campaign has been to let the public know this, and also to make them believe this fact. The education of the people has been slow, but sure, and the occurrence of a case of smallpox now no longer causes a panic in a community. There were but two deaths from this disease in this State during the year, one of them being an old negro man in Laurens County, who died from confluent smallpox complicated by pneumonia. The other was in Orangeburg County, a negro woman 70 years of age. There have been reported to this office about 250 cases of smallpox. There have been probably more cases than this, but physicians have neglected to report them.

Quite a serious outbreak occurred at Princeton, Laurens County, in January, but through the aid of Dr. S. J. Taylor, Health Officer of Greenville County, Dr. J. L. Donnon and others, the epidemic was confined to the territory in which it made its appearance. The State Health Officer visited this section and assisted in locating the cases present. There were at least 50 cases. There was an outbreak of about 25 cases near Orangeburg; this occurred in March, and the epidemic was handled by Dr. C. I.



Green, of Orangeburg. After the thorough vaccination in Georgetown County last year by Dr. A. H. Hayden, there were but few cases this year, these being near Andrews. Dr. T. R. Howle acted as agent for the State Board of Health in controlling this outbreak. Sporadic cases occurred in other counties, especially in Charleston County, at McClellanville and vicinity. Drs. S. D. Doar and J. C. Waring vaccinated practically everyone in this neighborhood. The bulletin on smallpox, issued by the State Board of Health, has been widely distributed.

We are glad to say that the law requiring school children to be vaccinated has been complied with this year more than heretofore, and in this way the State Board of Health has been called upon for a great amount of vaccine virus. By contract we obtain this virus from the National Vaccine and Antitoxin Institute at a special rate, and they furnish us with a clerk to handle the vaccine points. By this method the unused points are returned to us and the State receives credit for them. We have thus been able to reduce our bill for vaccine virus. We believe the policy inaugurated by this State in 1905 of furnishing free vaccine virus should be continued, as if the people cease to be vaccinated, smallpox will again ravage the State. From January to December, smallpox was reported to be in the following counties: Abbeville, 2; Aiken, 7; Bamberg, 6; Charleston, 101; Chester, 6; Clarendon, 2; Colleton, 1; Edgefield, 3; Florence, 4; Georgetown, 6; Greenville, 14; Greenwood, 5; Hampton, 1; Horry, 2; Laurens, 35; Lee, 2; Lexington, 1; Oconee, 2; Orangeburg, 25; Richland, 8; Sumter, 2; Williamsburg 1; making a total of 236.

From the first of January to the first of December 39,320 vaccine points and tubes have been issued from this office at a cost of \$2,555.81.

The following doctors were appointed as special agents for the State Board of Health, under Section 2 of Act 434, approved the 22nd day of February, 1905: Bamberg County, W. C. Abel, \$10; Charleston County, C. A. Speissegger, Jr., \$10; E. H. Sparkman, \$15; S. D. Doar, \$50, and J. C. Waring, \$50, \$125; Edgefield County, G. W. Blackwell, \$15; Georgetown County, T. R. Howle, \$25; Laurens County, J. L. Donnon, \$65; Orangeburg County, C. I. Green, \$15; Richland County, L. M. Daniels, \$10.

The following is a list of the claims approved against several counties under the same act and section: Aiken, \$4.10; Bamberg, \$6.60; Berkeley, \$7.10; Charleston, \$159.00; Chester, \$16.00; Flor-

ence, \$1.30; Greenwood, \$28.80; Laurens, \$68.10; Orangeburg, \$6.90; Richland, \$47.80.

#### SCARLET FEVER.

I regret to report that there has been a considerable increase in this disease this year. It is an extremely treacherous disease and its sequela, Bright's disease and middle ear trouble, do as much damage as the original disease. The disease is of a mild type. There have been 486 cases reported up to December 1st. Up to November 1st there were 10 deaths reported. Greenville, Spartanburg and York counties showed the greatest number of cases. We are determined to inaugurate more active measures this year to handle this disease. We feel sure that many cases occur among negro children that are unsuspected, and in this way the disease is spread. Many cases of oedema of the extremities are seen in negro babies and attributed to teething, which is probably due to the effects of scarlet fever. At the present time the medical world is divided as to the length of time for quarantine of this disease. We hope it may be definitely determined that a rigid quarantine and isolation of the patient for a short time will be sufficient.

From January to December, scarlet fever was reported to be in the following counties: Abbeville, 9; Aiken, 1; Anderson, 33; Bamberg, 1; Beaufort, 1; Charleston, 11; Cherokee, 2; Chester, 13; Chesterfield, 5; Darlington, 1; Dorchester, 2; Edgefield, 1; Florence, 16; Greenville, 81; Greenwood, 7; Kershaw, 21; Lancaster, 1; Laurens, 5; Lexington, 1; Marion, 2; Marlboro, 1; Newberry, 13; Oconee, 16; Orangeburg, 5; Pickens, 22; Richland, 58; Saluda, 9; Spartanburg, 55; Sumter, 1; Union, 3; York, 89; making a total of 486.

#### DIPHTHERIA.

The prompt use of diphtheria antitoxin, on account of the fact that the State furnishes it free to all, is not only reducing the number of deaths, but also reducing the incidence of this disease in South Carolina. The number of deaths have been reduced for the first ten months, as compared with last year, from 75 to 59; the number of cases for the first eleven months are 1,037, compared with 1,505 last year, a reduction of 532 cases.

The following table shows the monthly incidence, by counties, of cases diagnosed as diphtheria and receiving the antitoxin:



Counties.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	Total.
Abbeville			7	5		1		1	6	2		22
Aiken		1	1					4	2	7		16
Anderson	8	7	1	5	3	2	4	8	21	25	17	101
Bamberg	2	1								1	1	5
Barnwell			1	1						1		3
Beaufort							1				1	2
Berkeley	1				1			2				4
Calhoun											1	1
Charleston	9	2		2	9				12	19	15	68
Cherokee	3				1		4	1				9
Chester					1		1	1	4	2		8
Chesterfield	1	2	1	1			1	3	8	5		22
Clarendon			2				1	3		1	3	6
Colleton		2										2
Darlington		1		5				2		12	1	25
Dillon	7	7		1			1		5	6		27
Dorchester	1	2		2		1		2	7			15
Edgefield	5	2		3						1	2	13
Fairfield		3		1						1	2	4
Florence	5		1				3	9	7	1	1	27
Georgetown	4	1	2						1	3		11
Greenville	1		3	2	1			8	15	21	4	55
Greenwood						1	1	12	14	15	5	48
Hampton	3		4		1				1		1	10
Horry		1					1	4	2			8
Kershaw									10	8	2	20
Lancaster									1	1		2
Laurens								5	2		5	12
Lee		1	1						5	3	1	11
Lexington	2	5						24	10	26	3	70
Marion	1	2			1	1	3	1	1	3		13
Marlboro	1	4						5	3	5		25
Newberry	1			3					3	4	3	14
Oconee		1	1		1		1	1		18	3	23
Orangeburg	5	1	1			1		3	5	18	4	37
Pickens		1	1						3		1	6
Richland	5	4		6	1		1	4	5	16	5	47
Saluda	2	1	2					3	8	10	1	27
Spartanburg	5	8	7	5	5		4		23	18	10	85
Sumter	3		1		1				12	14		31
Union		1	1		1				3	4	20	30
Williamsburg	1	1	1			1	2	3	4	1		14
York		13	1		1			8	26	9		58
Total.....	81	81	39	44	27	8	28	114	234	274	107	1037

The December reports for diphtheria came too late to be included in the above tabulation, but are as follows: Aiken, 7; Anderson, 13; Barnwell, 1; Beaufort, 1; Charleston, 25; Chesterfield, 1; Clarendon, 1; Darlington, 4; Dorchester, 1; Florence, 10; Georgetown, 1; Greenville, 2; Greenwood, 2; Horry, 8; Kershaw, 1; Lee, 5; Lexington, 1; Marlboro, 2; Newberry, 5; Orangeburg, 3; Pickens, 1; Richland, 18; Spartanburg, 9; Sumter, 4; York, 1. Total, 127.

The amount of diphtheria antitoxin consumed as compared with 1915 is as follows:

	1,000 Units	3,000 Units	5,000 Units	10,000 Units		1,000 Units	3,000 Units	5,000 Units	10,000 Units
<b>1915.</b>					<b>1916.</b>				
January ..	78	62	128	....	January ...	70	49	109	9
February ..	41	46	115	....	February ..	73	103	151	13
March ....	42	40	137	....	March .....	63	56	90	19
April .....	73	34	115	....	April .....	28	27	92	10
May .....	46	25	62	....	May .....	11	26	66	5
June .....	51	24	58	....	June .....	50	33	67	13
July .....	41	43	81	....	July .....	42	40	69	9
August ....	75	44	162	....	August ....	200	106	209	31
September .	404	299	674	....	September .	337	186	442	92
October ...	253	151	496	....	October ...	310	131	383	116
November .	230	137	362	....	November .	49	49	154	53
December .	503	317	805	....	December .	....	....	....	....
	<u>1,837</u>	<u>1,222</u>	<u>3,195</u>						

The expenditure for diphtheria antitoxin, as compared with 1915, is as follows:

<b>1915.</b>					<b>1916.</b>				
January .....	\$	378.70			January .....	\$	328.65		
February .....		312.60			February .....		490.10		
March .....		349.00			March .....		330.15		
April .....		312.40			April .....		253.15		
May .....		180.75			May .....		178.85		
June .....		173.90			June .....		232.65		
July .....		240.55			July .....		228.80		
August .....		420.90			August .....		711.20		
September .....		1,953.65			September .....		1,518.35		
October .....		1,322.35			October .....		1,402.15		
November .....		1,023.95			November .....		545.50		
December .....		2,289.45			December .....		647.90		
		<u>\$8,958.20</u>					<u>\$6,867.45</u>		

The contract with H. W. Alexander & Co., which they have satisfactorily carried out for the past five years, was terminated by them on November 1st of this year. H. M. Alexander & Co. made arrangements with the National Vaccine and Antitoxin Institute of Washington, D. C., to carry out their contract for the balance of the year on the same terms, and the National Vaccine and Antitoxin Institute are now satisfactorily supplying the following distributors:

#### DIPHtheria ANTIToxin DISTRIBUTORS.

Abbeville County—Abbeville, McMurray Drug Co.; Donalds, Donalds Drug Co.; Due West, J. H. Bell & Son.

Aiken County—Aiken, W. J. Platt & Co.; Graniteville, W. J. Platt & Co., W. C. R. Turnbull; Langley, J. F. Baker; North Augusta, C. A. Teague, Druggist, T. G. Kirshaw; Salley, Peoples' Pharmacy, Wagener.

Anderson County—Anderson, Owl Drug Co., Evans' Pharmacy; Belton, Horton's Pharmacy; Honea Path, Bolt Drug Co.; Iva, Watson Drug Co.; Pelzer, W. W. Griffin; Pendleton, E. G. Evans & Co.; Townville, S. A. Wideman; Williamston, Buford-Griffin Co.



Bamberg County—Bamberg, Mack's Drug Store, H. W. Johnson; Denmark, Denmark Drug Co.; Ehrhardt, Ehrhardt Pharmacy; Olar, R. & H. Drug Store.

Barnwell County—Allendale, R. P. Searson Drug Co.; Barnwell, R. A. Deason; Blackville, J. H. Sanders, Wessinger's Pharmacy; Fairfax, W. R. Tuten; Williston, J. M. Smith & Son.

Beaufort County—Beaufort, C. G. Luther; Port Royal, M. B. Cope.

Berkeley County—Moncks Corner, Moncks Corner Drug Store.

Calhoun County—St. Matthews, Fair's Pharmacy; Fort Motte, Fort Motte Drug Co.

Charleston County—Charleston, G. W. Aimar & Co., D. P. Frierson, C. F. Schwettman & Son, W. H. Ziegler, L. G. Melfi; Mt. Pleasant, A. H. Patjens.

Cherokee County—Blacksburg, Carolina Drug Co.; Gaffney, Gaffney Drug Co.

Chester County—Chester, Chester Drug Co.

Chesterfield County—Cheraw, T. E. Wannamaker & Sons; Chesterfield, D. H. Laney; Jefferson, Jefferson Drug Co.; McBee, McBee Drug Co.; Pageland, Pageland Drug Co.

Clarendon County—Jordan, L. W. Neules, M. D.; New Zion, E. B. Gamble; Manning, Dickson's Drug Store; Packville, Thos. W. Gunter; Summerton, D. O. Rhame, Summerton Drug Co.; Turbeville, C. E. Gamble.

Colleton County—Walterboro, Walterboro Drug Co.

Darlington County—Darlington, People's Drug Co.; Hartsville, Robert Stewart, Jr.; Lamar, Palmetto Drug Co.

Dillon County—Dillon, Evans' Pharmacy, McLaurin Drug Co.; Latta, E. A. Bethea; Page's Mill, Smith's Pharmacy.

Dorchester County—St. George, P. M. Judy; Summerville, Tupper Pharmacy Co.

Edgefield County—Edgefield, Penn & Holstein; Johnson, The People's Drug Co.

Fairfield County—Blythewood, M. Langford; Ridgeway, J. W. Teams; Winnsboro, J. H. McMaster & Co.

Florence County—Florence, F. U. Lake Drug Co.; Lake City, Lake City Drug Co.; Scranton, W. S. Lynch; Timmons ville, Cole Drug Co., Marvin's Drug Co.

Georgetown County—Georgetown, Iseman Drug Co.

Greenville County—Fountain Inn, Redick's Pharmacy; Greenville, Carpenter Bros., L. H. Stringer; Greer, Corner Drug Co.; Piedmont, Suber Drug Co.; Simpsonville, Simpsonville Drug Co.

Greenwood County—Greenwood, Crawford Drug Co., Greenwood Drug Co.; Ninety-Six, Barr Drug Co.; Ware Shoals, Ware Shoals Mfg. Co. (Drug Dept.)

Hampton County—Estill, Estill Pharmacy; Hampton, Chas. A. Rush.

Horry County—Conway, Conway Drug Co.

Jasper County—Ridgeland, Louis McCaw.

Kershaw County—Bethune, Bethune Drug Co., H. H. Holder; Camden, W. R. Zemp.

Lancaster County—Heath Springs, Stover Pharmacy, People's Drug & Grocery Co.; Kershaw, Hayes & Gregory; Lancaster, Standard Drug Co.

Laurens County—Clinton, City Pharmacy; Laurens, Powe Drug Co.

Lee County—Bishopville, Parker Drug Co.

Lexington County—Batesburg, Ridgell Drug Co.; Chapin, J. W. Eargle; Leesville, Citizens' Drug Co.; Lexington, Harmon Drug Co.; Pelion, D. R. Kneece; Swansea, J. R. Lanford.

Marion County—Marion, J. S. Davis; Mullins, Palace Drug Co., Kirby's Pharmacy; Nichols, Moody's Drug Store.

Marlboro County—Bennettsville, Douglas & Breeden; Blenheim, Blenheim Drug Co.; Clio, McLeod's Pharmacy; McColl, Moore Drug Co.

Newberry County—Little Mountain, J. M. Sease; Newberry, Gilder & Weeks, W. G. Mayes; Prosperity, Prosperity Drug Co.

Oconee County—Clemson College, L. C. Martin; Fairplay, W. C. Mays; Seneca, Seneca Pharmacy; Walhalla, Dr. H. M. Barton; Westminster, H. B. Zimmerman & Co.

Orangeburg County—Branchville, W. F. McKewn; Elloree, P. L. Felder; Eutawville, E. O. Horger; North, Davis Drug Co.; Orangeburg, J. G. Wannamaker Mfg. Co.; Springfield, Springfield Drug Co.

Pickens County—Central, Central Drug Co.; Easley, Palmetto Pharmacy; Liberty, Hunter's Pharmacy; Pickens, Pickens Drug Co.

Richland County—Columbia, Blanding Street Drug Store; McGregor's Drug Store, Taylor Drug Co.; Wingfield's Pharmacy; New Brookland, Burnett & Whetsell.

Saluda County—Ridge Spring, Ridge Drug Co.; Saluda, Saluda Drug Co.



Spartanburg County—Campobello, Campobello Drug Co.; Converse, People's Drug Store; Cowpens, Cowpens Drug Co.; Inman, Inman Drug Co.; Landrum, W. M. Lambright; Pacolet, Pacolet Mfg. Co.; Spartanburg, Green's Drug Store, Arthur Irwin, Ligon's Drug Store, K.-W.-N. Pharmacy; Woodruff, O. E. Westmoreland.

Sumter County—Mayesville, King & Gardner, Bradley & Thomas; Sumter, Sibert's Drug Store.

Union County—Jonesville, Jonesville Drug Co.; Union, Glymph's Pharmacy.

Williamsburg County—Greelyville, Zeigler's Drug Co.; Johnsville, Cockfield Drug Co.; Kingstree, Gamble & Jacobs, Kingtree Drug Co.

York County—Clover, Clover Drug Co.; Fort Mill, W. B. Ardrey & Co.; Rock Hill, Rock Hill Drug Co.; Sharon, Sims Drug Co.; Yorkville, York Drug Co.

#### TYPHOID FEVER.

We are exceedingly gratified to note the decrease in the number of deaths from this disease in South Carolina. Up to November 1st there was a reduction of 61 deaths, or allowing ten cases per death, 610 cases. There were probably 4,130 cases up to November 1st, which would give a case rate per thousand of approximately 25, which is a fairly low rate comparing it with the rate for the entire United States, which had in 1914 a death rate of 15.4. However, it is too high. A tremendous amount of work has been done in this State this year to rid the State of this disease.

The United States Public Health Service in Greenville County did a stupendous work. They visited 11,751 homes, inspected 113 churches, 103 schools, five post offices, 13 railway stations, 221 rural stores; held 119 lectures. In their report of October 24, they had revisited 2,500 of these homes, and they reported that over 20 per cent. of these homes had a sanitary closet and was protected against typhoid fever. This immense work could only have been carried on by the Federal Government, for its cost was borne entirely by the United States Government. Last year the Legislature appropriated \$3,600 for the support of two units for community work; these units have done exceedingly well; they have worked in Florence County, in the Sardis district, and the results there were most gratifying. When Dr. Howell first

went to this district, where there were 141 families, 46 homes had open back unsanitary privies and 95 had no privies at all. When he left 43 of the 46 homes had sanitary privies and are protected against typhoid fever, and 93 of the 95 homes that had no privies now have sanitary privies. Six hundred and sixty-two people were examined for hookworm, 214 of whom had this disease and were treated.

Dr. Howell also worked in Glenwood district with equally good results. Work was done in Sumter County with the result that the city of Sumter passed a model ordinance, and we know that typhoid fever will not exist to any extent in that city during the coming year.

Work was done in Laurens County by Dr. Routh with excellent results, and is now being done by Dr. Routh in Orangeburg County. Dr. Routh finishes his work in Orangeburg County the first of the year and Dr. Howell finishes his work in Dillon County at the same time. The International Health Commission gives the State of South Carolina one dollar for each dollar the State will appropriate, and we are thus enabled to make the money appropriated by the State do twice as much good. We are this year asking the Legislature to appropriate \$7,000 for this purpose, and we will be able to give a year's work. Last year the appropriation was only for nine months' work. We purpose this year to finish up a county at a time, taking a county up either by townships or by school districts, and thus give to the farmer and those living in the rural districts the same health advantages as are enjoyed in cities.

Too little has been done in the past for the health of the rural communities. Cities have their boards of health and organizations for carrying on health work, but the rural districts have no such facilities. With all the natural advantages of living in the country, statistics absolutely prove that the child living in the country is not the physical equal of the child brought up in the city, and that the death rate in rural communities is higher than in the cities. This should not be so, and by the intensive work we are now purposing to do, we intend to so forcibly bring it to the attention of each individual living in the country that if he wishes to enjoy good health he must obey certain fixed rules of hygiene.

These rules are very simple. First, he must see that his drinking water is not contaminated. To do this he must abolish the



open well and must have a pump which goes through the first strata of impervious soil and reaches water that is not surface water. The old oaken bucket and the open well cause typhoid fever, and, therefore, must not be used. Second, he must properly dispose of human excreta. He cannot throw this on the ground, or place it where flies can have access to it, and escape the consequences of his folly. Typhoid fever is a disgrace to a civilized community. Why? Because it means that the people of a community are willing to swallow the excreta from other persons living in that community and are not willing to bear the slight expense necessary to prevent this. Can a people be called civilized who are willing to swallow human filth. If the people knew these things they would not permit these conditions to exist. This is proved in the communities where the knowledge has been spread. It is only by daily contact with the people that one can impart these facts and get the people to act upon them. This is what our community units do, and this is why we ask you to continue them. These men give lectures in plain English, that the most uneducated can understand; they distribute literature clearly written, demonstrating the facts that they wish to impress. This work is being done in nearly all the Southern States, and one of our cities is considered the model sanitary city of the South. We hope, in 1917, to show to other States that we have other model cities and model counties. The people are urging us to come and help them, and we feel that you legislators will give us the funds to do so.

In addition to our educational work, we are striving to prevent typhoid by getting the people to be inoculated against this disease. Up to the first of December the Laboratory has sent out 31,011 ampuls of typhoid bacterin. Typhoid fever should certainly be reported by the physicians, for more good work can be done in preventing the spread of this disease than perhaps any other if the Board of Health can have information when the first cases arise in a community. Here again we are depending upon the report of physicians and in certain counties they have failed to report any cases of typhoid fever during the year, and in other counties only a faithful few of the physicians are doing their duty. Up to the first of December, only 919 cases of typhoid fever were reported, when, as we have shown, the actual number of cases existing was at least 3,690! this based upon the number of deaths, 413, for ten months.

# RULES FOR PREVENTING TYPHOID FEVER.

For the individual:

1. Keep away from all known or suspected cases of typhoid.
2. Wash hands thoroughly before meals. Do not use "roller towels."
3. Use drinking water only from sources known to be pure, or, if this is not possible, use water that has been purified by municipal filtration or by hypochlorite treatment or by boiling in the household.
4. Avoid bathing in polluted water.
5. Use pasteurized or boiled, instead of raw milk.
6. Select and clean vegetables and berries, that are to be eaten raw, with greatest care.
7. Avoid eating "fat" raw oysters, and, in general, oysters and other shell-fish whose origin is not known.
8. Be vaccinated against typhoid in all cases in which any special exposure is known or feared.

For the Community:

1. Insist on the hearty co-operation of all persons with an efficient health officer.
2. Require notification and a reasonable degree of isolation of every known or suspected typhoid case.
3. Exercise strict control over the disinfection of known typhoid excreta.
4. Insist on pure or purified water supplies.
5. Require pasteurization of milk supplies.
6. Regard all human excreta as possibly dangerous, and control their disposition in such a way as to prevent contamination of food or drink.

## TUBERCULOSIS.

The fight on this disease is being systematized, and South Carolina is coming to the front. We are glad to report that the appropriation for a ward for women was used to build such a ward, and one that does credit to the State. The first patient was admitted August 16, 1916, and the ward is now full to its capacity of sixteen patients. The proposed plan for fighting tuberculosis in this State may be briefly outlined. First, the establishment of free clinics in the larger cities for the diagnosis of the disease; the requiring of physicians under heavy penalty to notify the health authorities on making the diagnosis of tuberculosis; the employment of district nurses to visit the



homes of tubercular patients and to give them instructions as how to take care of themselves and how to protect others; county tuberculosis camps for the care of those so far advanced with the disease that sanatorium treatment will not arrest or cure; the maintenance of a sanatorium sufficient large to take care of incipient cases and those cases that can be arrested or cured by treatment in the sanatorium.

The South Carolina Sanatorium at State Park is for the treatment of incipient and moderately advanced tuberculosis. It is under the control of the State Board of Health. It is maintained in part by legislative appropriation and by the nominal charge of one dollar per day for each patient. This pays for board, lodging, nursing, drugs, medical attention and laundry. There are no extras. The first male patient was admitted May 22, 1915. The first female patient was admitted August 16, 1916. Colleton was the first county to support a patient at the South Carolina Sanatorium. Will your county do it? Columbia was the first city to endow a bed. How many are maintained by your town? The Pacific Cotton Mills, of Columbia, were the first to provide for employees. What mills will do likewise? To carry out this plan the State Sanatorium at State Park requires for its proper maintenance this year an appropriation, from the State, of \$40,000 for building purposes and \$10,000 for maintenance. With the \$40,000 for building purposes, two new wards will be built, one for men and one for women; a dining-room and kitchen with a capacity sufficient to take care of one hundred patients will be built, and an infirmary for the receipt of patients on their arrival where they may remain a short time until their disease is properly classified by the physician in charge before sending them to the rather rigorous outdoor regime which is necessary for their permanent recovery. This infirmary is also necessary to take care of those patients who may become bed-ridden through the course of their treatment.

The arguments for a State Sanatorium are as follows: It gives the patient a better chance to recover. The family, being relieved of the care of the patient, has a better chance to remain or become self-supporting. It makes the spread of the disease less likely in the home. It reduces the likelihood of infection in the community from the patient. If the disease is arrested or the patient cured, there is a new and fervent missionary to preach everywhere the gospel of prevention and cure—fresh air and wholesome living. The institution itself is a community monument to the growing conviction that tuberculosis is curable

and the laboratory in which the truth of that conviction is demonstrated. It serves the triple purpose of prophylaxis, education, and efficient treatment. As we have said in the first part of our report, tuberculosis shows, for the first nine months of this year, 1,363 deaths from all forms of this disease.

We have been able to show that our plan of educating the public has reduced somewhat the death rate in this State, but systematized efforts will show the same wonderful results as has been shown in New Zealand where tuberculosis has been eliminated. Up to the first of December, only 248 cases of tuberculosis have been reported. We hope, however, that in 1917 we can impress upon the physicians that something will be done for their patients, and thus induce the physicians to make better reports.

The following table shows the number of deaths from tuberculosis occurring this year, up to the first of November:

DEATHS FROM TUBERCULOSIS, ALL FORMS, IN THE FOLLOWING COUNTIES FOR TEN MONTHS TO NOVEMBER 1, 1916.

	Population	Number
Abbeville .....	35,545	32
Aiken .....	43,334	34
Anderson .....	76,866	65
Bamberg .....	19,201	9
Barnwell .....	34,209	13
Beaufort .....	30,355	17
Berkeley .....	23,487	7
Calhoun .....	18,115	8
Charleston .....	88,902	119
Cherokee .....	28,722	37
Chester .....	29,853	42
Chesterfield .....	29,411	24
Clarendon .....	34,289	31
Colleton .....	36,412	9
Darlington .....	38,811	33
Dillon .....	24,832	31
Dorchester .....	18,734	21
Edgefield .....	29,759	15
Fairfield .....	29,450	16
Florence .....	39,467	69
Georgetown .....	22,720	32
Greenville .....	76,228	80
Greenwood .....	37,327	42
Hampton .....	25,856	11
Horry .....	28,910	25
Jasper (included in Beaufort and Hampton).....	.....	4
Kershaw .....	29,188	17
Lancaster .....	27,884	31
Laurens .....	43,749	36
Lee .....	27,274	18
Lexington .....	34,891	19
Marion .....	22,615	28
Marlboro .....	38,060	25
Newberry .....	36,909	30
Oconee .....	29,291	17
Orangeburg .....	60,866	41
Pickens .....	28,611	23
Richland .....	60,181	92
Saluda .....	21,986	7
Spartanburg .....	92,909	97
Sumter .....	41,446	53
Union .....	32,235	33
Williamsburg .....	40,758	26
York .....	50,900	73
Total.....	1,607,745	1,492

Deaths for 1915.....	1,828	Deaths for 1916.....	1,492
Rate for 1915 per 100,000.....			136.3
Rate for 1916 per 100,000.....			111.4



## MEASLES.

As I am preparing this report, an extensive epidemic of measles is developing in the State. It is stated that in some schools in Greenville County that 40 per cent. of the pupils have this disease, and consequently the education of the pupils is being seriously interfered with. The deaths from measles for the year have been only ten, but deaths from the sequelae of measles have been very numerous. The public must be taught in every way possible to guard their children against measles, and not think that it is necessary for all children to have this disease. Measles is so contagious and so many people are susceptible to it that practically all who are exposed to the disease and have not previously had it take it.

Unless the schools can have a competent nurse to examine all the pupils as they enter the schools during an epidemic little can be accomplished; a strict quarantine of those pupils with measles and the keeping out of school the other pupils of the same family must be carried out. The physicians do not properly warn the public in regard to the danger of this disease, nor do they think the disease is of sufficient importance to report to the health authorities, and until this apathy is overcome, measles will continue to rage in our State. Up to the first of December, 684 cases of measles have been reported.

## WHOOPIING-COUGH.

This disease, so deadly to children under two years of age, continues unchecked in this State. Up to the first of December 576 cases of whooping-cough have been reported, and up to November 1st, 123 deaths from this disease. We again advise that children with whooping-cough wear a band on their arm with the word "Whooping-Cough" while they have this disease, and should be confined to their houses and yards for the first two weeks.

## ANTERIOR POLIOMYELITIS (INFANTILE PARALYSIS).

We have been reporting this disease yearly, but have not had an epidemic of it until this year since 1910. At that time 85 cases were reported to the State Board of Health. This year, up to the middle of December, 129 cases have been reported.

The following table shows the number of cases of anterior poliomyelitis (infantile paralysis) by counties, reported monthly to the State Board of Health:

	January.	May.	July.	August.	September.	October.	November.	December.	Total.
Aiken .....			1	7	1				9
Anderson .....				8	1	1			10
Bamberg .....						1	1		2
Barnwell .....					1			1	1
Beaufort .....				1					1
Berkeley .....				1	1				2
Calhoun .....				1					1
Charleston .....				1					1
Cherokee .....			1						1
Chester .....				1	1	1	1		3
Chesterfield .....				1	2				3
Darlington .....		1				1			2
Dillon .....				2					2
Fairfield .....					1				1
Florence .....							1		1
Greenville .....			5	8	2				15
Greenwood .....				1			1		1
Hampton .....							1		1
Horry .....				1					1
Jasper .....					1				1
Kershaw .....							2	1	3
Laurens .....	1			2	1				4
Lee .....					1				1
Lexington .....			1	5	3				9
Marlboro .....			1			1			2
Oconee .....			2	1	1				4
Orangeburg .....			1	2	1	4			8
Pickens .....			1	2	1			1	5
Richland .....				7	1	3		1	12
Saluda .....				1	1				2
Spartanburg .....			3	3	2	1			9
Sumter .....					1	1			2
Union .....			1	1					2
Williamsburg .....			1						1
York .....			2	3	1				6
Total .....	1	1	20	59	24	13	6	5	129

The height of the epidemic was reached in August, and since declined, with an increase in the number of cases during December. The epidemic of infantile paralysis in New York reached such tremendous proportions as to overshadow all other diseases in that State, and the South Carolina State Board of Health at its meeting in July felt so alarmed at a possibility of the disease in this State that they sent Dr. F. A. Coward, Director of the State Board of Health Laboratory, to New York City, where he made a study of the conditions there, and made the following report to the Executive Committee of the State Board of Health:

Columbia, S. C., July 24, 1916.

*Dr. J. A. Hayne, Sec'y State Board of Health, Columbia, S. C.*

Dear Sir:—I beg to submit the following report of my recent visit to New York for observation of methods employed in combatting the epidemic of infantile paralysis, the said trip being



authorized by the Executive Committee at their meeting of July 13th:

I was received with the greatest courtesy by the New York City Health Department, and by all of the officials of the United States Public Health Service with whom I came in contact. I had personal conferences with the following:

Dr. Haven Emerson, Commissioner of Health, New York.

Dr. Boldan, Chief of Bureau of Publicity and Public Health Education.

Dr. Somerset, Chief of Clinics at the Willard Parker and Kingston Avenue hospitals.

Dr. Dochez, at the Rockefeller Institute.

Drs. Perry, Lavender and Banks, of the United States Public Health Service.

Also attended clinics and lectures on diagnosis at the Willard Parker and Kingston Avenue hospitals, in which hospitals over 600 cases of the disease were under observation. I made efforts to obtain the use of a moving picture film dealing with infantile paralysis.

This film was worked up by the co-operation of the City Health Department and a local newspaper, but I found that the film had been taken over by the moving picture trade. This film can be obtained through the regular channels, and the local theatres all over the State should be glad to run it. Theatres are more affected than any other business, as they would be immediately closed in case of an epidemic. Hence their managers should grasp this opportunity to co-operate with the State and local boards of health in the effort to prevent an outbreak of the disease in epidemic form.

#### MANNER OF HANDLING THE NEW YORK EPIDEMIC.

The New York Board has probably the most thorough and complete organization to be found in this country. The United States Public Health Service officials are unanimous in their praise of the equipment of the local board in discipline, personnel and facilities, financially and otherwise, for combatting an epidemic of this kind. That such a board has not been more brilliantly successful in suppressing the epidemic should be less a cause for surprise than for one of apprehension.

It may be taken for granted that the New York Board, co-operating with the Public Health Service, is accomplishing what is, at present, humanly possible. How much less, then, can be ex-

pected from states and municipalities far below such a standard of efficiency, and less prepared financially? The New York campaign is based on *prompt notification, isolation of cases and contacts and frank publicity.*

#### NOTIFICATION.

All suspicious cases are immediately notified to the central office by telephone. The information is acted upon, whether sent in from the patient, by the physician, member of the family, or even by a neighbor. Whether notified by physician or not, an expert diagnostician is immediately sent to confirm the diagnosis. If suspicious or positive, the sick child is removed to one of the contagious diseases hospitals, and all persons who have been in contact with it are quarantined for ten days. Sick children are considered non-infectious after six weeks. Owing to the wide difference in cases it is impossible to make a fixed rule to fit all cases.

There are exceptions to the rule that the patient is not infectious after six weeks. There are exceptions to the rule that the incubation period is not more than ten days. There are, in addition, the abortive and unrecognized forms, also the healthy carriers, both of whom are probably active spreaders of infection, but neither of whom is readily detected. Terminal disinfection is of doubtful value, but can at least do no harm.

#### PUBLICITY.

Most gratifying results have resulted from the frank dealing with the press in this campaign. The conferences with the press men every morning, daily bulletins of the progress of the epidemic, and other bulletins showing the addresses (not necessarily the names) of all new cases, with a summary of old cases; together with articles in the Sunday additions, written by leaders in the investigation and study of the disease, have all combined to work out in the most satisfactory way. New York City is a great newspaper-reading community, and doubtless many thousands of people would never have known of the disease, or of this epidemic, except through the press.

The moving picture shows in the unaffected parts of the city are throwing illustrated slides on the screen between the regular films, and the city board also co-operated to the fullest extent with a local newspaper and a film manufacturing company in getting up a film showing the methods of avoiding the disease. This film



was shown night and day from a truck fully equipped with a daylight screen and lecturer, etc. It attracted widespread attention.

The United States Public Health Service has uniformed physicians at all points of egress from the city who issue cards showing that persons with children have not been liable to become contacts and that the children are well at time of leaving the city. Local boards should require these cards as they are easily obtained without red tape, and cost nothing. For the present it seems more practicable for the local boards to carry on this work than for the State to attempt it.

The policy of frankness towards the press, and the general response by the latter, have resulted in the publication of an enormous amount of matter on the subject, so that there has been created a certain tendency to exaggerate the importance of the conditions, due to our human fondness for marvelling at the accident of sudden death, while blinding the eyes to the most certain but less spectacular terminations of every day life.

Up to July 22nd, the number of cases reported was slightly over 2,500, or more than during the previous epidemic. The number of deaths were slightly over 500, giving a death rate of about 20 per cent. A comparison of the figures with the total population of Greater New York City, or the transference of these figures to the population of South Carolina, or, by further reduction, to that of any city in South Carolina, will show that relatively, such an epidemic with us would cause less than our annual death rate from either intestinal complaints, typhoid fever, or tuberculosis. The majority of publications in newspapers have come from reliable sources and are good. A small amount which were bad, have come from cranks and quacks.

Dr. Bolduan, Chief of the Department of Publicity, thinks that the free publicity given the situation has been of most importance and that it has not injured business in New York in any way.

I am attaching reprints and newspaper clippings dealing with the treatment of adrenalin injections and that by the use of convalescent serum. The enclosures are merely for information as it was not my object to study the treatment of the disease.

Respectfully submitted,

F. A. COWARD, M. D.,  
Director of Laboratory.

Acting upon this report the State Health Officer proceeded to put into effect regulations in conformity with what was being done by other States. Health certificates were required from all persons under 16 years traveling on the trains, and literature was sent to all local boards of health and to all physicians in the State. The State Health Officer attended a conference on August 17, with the State Health Officers of other States and the United States Public Health Service, and minimum requirements for the prevention of the spread of infantile paralysis were adopted. Infantile paralysis remains a serious menace, and we wish to call the attention of the Legislature to the fact that a possible severe epidemic of this disease is probable next year.

The public must realize that this veritable scourge can only be prevented by intelligent co-operation on the part of the public with the local health authorities and also a systematic reporting of cases by the physicians. They must also understand that whatever inconvenience they are put to in combating this disease must be cheerfully borne in order to stamp it out. The State Health Officer feels that he must have the ungrudging support of the State authorities if he is to do anything next year to prevent a repetition of the New York disaster in South Carolina.

Instead of \$20,000 we are asking for \$25,000 for the prevention of the spread of contagious diseases in 1917, so that we may be properly supplied with money in case our fears in regard to an impending epidemic in this disease proves correct.

#### EPIDEMIC CEREBRO-SPINAL MENINGITIS.

We are glad to report there has been no epidemic of this disease this year. From January to December, cerebro-spinal meningitis was reported to be in the following counties: Barnwell, 4; Chester, 2; Chesterfield, 1; Greenwood, 1; Kershaw, 1; Orangeburg, 1; Pickens, 1; Richland, 2; Spartanburg, 1, making a total of 14. The State Board of Health has furnished meningitis serum, as required by law, to the following physicians:

Dr. J. C. Harper.....	Greenwood
Dr. J. F. Simmons.....	Greenwood
Dr. W. R. Wallace.....	Chester
Dr. A. T. Neely.....	Fort Mill
Dr. C. H. Abel.....	Norway
Dr. Oscar LaBorde.....	Columbia
Dr. P. A. Phillips.....	Springfield



Dr. Johnston Peeples.....	Estill
Dr. H. Wood.....	Turbeville
Dr. Baxter Haynes.....	Spartanburg
Dr. J. E. Edwards.....	Spartanburg
Mr. J. C. Copes, Secretary Board of Health.....	Spartanburg

Twenty deaths have been reported as cerebro-spinal meningitis, but probably some of these were tubercular.

#### MALARIA.

We believe that the time has come when this State should take advantage of our knowledge of the cause and prevention of malaria and do something to stop the great economic loss to the State from this disease. Probably no disease that we have plays so important a part in preventing the proper growth of a large portion of our State. The death rate from this disease is not as high as many other diseases, but by preventing people, who are suffering from this disease, from being able to do their full share of work its cost in dollars is tremendous.

There were 233 deaths attributed directly to malaria during ten months of 1916, but this does not begin to express the number of people who are incapacitated by this disease. Every tenth grade school child in South Carolina should be able to pick out the anopheles mosquito from the culex; should know where these mosquitoes breed, and should be able to have a working knowledge of how to prevent themselves from becoming infected with malaria. It is believed that if one day was set aside in the public schools for the teaching of Dr. H. R. Carter's primer, "Malaria—Lessons On Its Cause and Prevention," much good could be accomplished.

Dr. Carter is Assistant Surgeon General of the United States Public Health Service, and it was under his direction that malaria is controlled in Panama. It has been proved that the malarial mosquito does not carry over the parasites from one season to another, and that the new crop of mosquitoes must be infected in order to carry malaria. It is also known that the majority of people who have malarial parasites in their blood do not show the classical symptoms of malaria; namely, chills and fever, but that the parasites, by the destruction of the red cells in the blood, cause the individual harboring them to become anemic, weak and inefficient. It is also a well-known fact that in neighborhoods infested with malarial mosquitoes that the importation of laborers

infected with malaria will cause these mosquitoes to become infected and there will be an outbreak of malaria. We believe that a law should be enacted that where corporations or individuals import labor into a community they should be required to have the laborers' blood examined, and if malarial parasites are present a prophylactic dose of quinine should be given to these laborers daily. The United States Public Health Service will be called upon by the State Board of Health to assist us during the coming year in this fight, as we believe that much good will be accomplished.

The amount of money required for proper drainage of large areas of land is so great that it can only be done by the co-operation of all in a community, and we think that there is no better expenditure of money than that expended by drainage commissions. The most fertile soil in South Carolina lies in these so-called malarial districts, and whereas these sections are now sparsely populated on account of malaria and therefore the land is of low valuation. Should systematic efforts be made to get rid of malaria the proportionate rise in the value of land would much more than pay the expense of anti-malarial measures.

#### PELLAGRA.

This disease is still a medical sphynx; the solution of its cause being yet unknown, the controversy still rages. Those who believe it to be due to some infective agency, and those who believe it to be due to some lacking element in the food are equally convinced of the correctness of their views. However, we know that by putting a patient suffering with pellagra on a generous diet, giving him rest and hygienic surroundings, we can promise that the majority will get well. This is the teaching that we have had spread broadcast over this State. Our community workers in every lecture and in all their conversations with the people insist upon this. The hope of finding a specific drug that would cure all cases is practically abandoned.

Charlatans have traded upon the credulous fears of the public, selling worthless preparations known as pellagra cures, and it is our duty as physicians to let the public know that they are being duped. Whatever may be the cause, there are not half as many cases in the State this year as last year, and we begin to believe that in the near future we may write pellagra as a disease of the past. Certainly the reduction from 1,305 deaths in 1915 to 553



deaths in 1916, these figures being for ten months of each year, is most encouraging.

The following table shows the number of deaths from pellagra occurring this year:

DEATHS FROM PELLAGRA IN THE FOLLOWING COUNTIES FOR TEN MONTHS, TO NOVEMBER 1, 1916.

Counties.	Population	Number
Abbeville .....	35,545	7
Aiken .....	43,334	8
Anderson .....	76,866	39
Bamberg .....	19,201	2
Barnwell .....	34,209	4
Beaufort .....	30,355	5
Berkeley .....	23,487	2
Calhoun .....	18,115	4
Charleston .....	88,902	66
Cherokee .....	28,722	6
Chester .....	29,853	16
Chesterfield .....	29,411	4
Clarendon .....	34,289	3
Colleton .....	36,412	5
Darlington .....	38,811	10
Dillon .....	24,832	9
Dorchester .....	18,734	4
Edgefield .....	29,759	3
Fairfield .....	29,450	6
Florence .....	39,467	9
Georgetown .....	22,720	2
Greenville .....	76,228	33
Greenwood .....	37,327	19
Hampton .....	25,856	5
Horry .....	28,910	4
Jasper (included in Beaufort and Hampton).....	.....	2
Kershaw .....	29,188	19
Lancaster .....	27,884	17
Laurens .....	43,749	14
Lee .....	27,274	9
Lexington .....	34,891	9
Marion .....	22,615	6
Marlboro .....	33,060	10
Newberry .....	36,909	12
Oconee .....	29,291	6
Orangeburg .....	60,866	12
Pickens .....	28,611	4
Richland .....	60,181	50
Saluda .....	21,986	5
Spartanburg .....	22,909	47
Sumter .....	41,445	15
Union .....	32,235	8
Williamsburg .....	40,758	7
York .....	50,900	26
Total.....	1,607,745	553

Deaths for 1915.....	1,305	Deaths for 1916.....	553
Rate for 1915, per 100,000.....			97.4
Rate for 1916, per 100,000.....			41.2

## MINUTES OF EXECUTIVE COMMITTEE MEETINGS.

Columbia, S. C., February 29, 1916.

A special meeting of the Executive Committee of the State Board of Health was held Tuesday, February 29, at 1:30 P. M., at the offices of the Secretary, Palmetto Bank Building, with the following members present: Drs. D. B. Frontis, C. C. Gambrell, E. A. Hines, W. J. Burdell, Wm. Egleston, W. M. Lester, W. W.

Dodson, Jas. A. Hayne, Secretary and State Health Officer, and Thos. H. Peeples, Attorney General and C. W. Sawyer, Comptroller General.

The first business of the meeting was the election of County Health Officer for Greenville County, in pursuance of Act of the General Assembly of 1916. After balloting for the candidates, Dr. S. J. Taylor, of Greenville, was declared elected.

The resignation of Miss Ruth James, nurse at the South Carolina Sanatorium was read and accepted. Miss Kathleen M. Foster was elected as nurse to take Miss James' place. The Board then took up the business of the erection of the ward for tubercular women provided for by the last General Assembly. Wilson & Sompayrac were selected as architects, and the State Health Officer was directed to advertise for bids which were to be opened March 28, at which time the Sub-Committee of the Executive Committee of the State Board of Health for the Erection and Maintenance of a Tuberculosis Hospital would convene.

It was moved and seconded that the State Health Officer formulate a plan for handling the free distribution of vaccine virus more economically, and be authorized to ask for bids from the different manufacturing firms, to be presented at the April meeting.

It was moved and seconded that Dr. F. A. Coward, Director of State Board of Health Laboratory, be allowed \$3,000, if so much be necessary, for the expenses of the Laboratory; said sum to be disbursed upon presentation of bills approved by Dr. Coward to the Secretary of the State Board of Health.

It was moved and seconded that the State Health Officer be empowered to expend \$200, if so much be necessary, in the improvement of the grounds of the South Carolina Sanatorium.

The Board endorsed the efforts of Dr. E. A. Hines to secure an investigation by the Children's Bureau of Federal Government as to infant mortality in Oconee County, and that the Secretary be instructed to write to the Children's Bureau endeavoring to secure such aid.

There being no further business the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,  
Secretary.

Attested.



Columbia, S. C., March 28, 1916.

The Sub-Committee of the Executive Committee of the State Board of Health for the Erection and Maintenance of a Tuberculosis Hospital convened at 10 A. M., Tuesday, March 28, at the offices of the Secretary, Palmetto Bank Building, with the following members present: Drs. Wm. Egleston, C. C. Gambrell, W. J. Burdell and Jas. A. Hayne, Secretary and State Health Officer.

The meeting was for the purpose of opening bids for the erection of the ward for women, and other such business as may arise.

The contract for the erection of the ward for women was awarded to Taylor-Waters Co., of Columbia, the bid being \$3,641.00. This was exclusive of plumbing, screening and curtains, which the State Health Officer was authorized to let to the lowest bidder. The contract for plumbing was awarded to W. B. Guimarin & Co., the bid being \$850.00. The contract for screens was awarded to W. J. Baker Co., the bid being \$144.45. The contract for curtains was awarded to Columbia Awning & Tent Co., the bid being \$111.60.

The Committee then went to the Sanatorium and made a thorough inspection of the grounds, kitchen, etc., and found everything in a very satisfactory condition.

There being no further business the Committee adjourned.

JAMES A. HAYNE, M. D.,  
Secretary.

Attested.

Charleston, S. C., April 17, 1916.

The annual meeting of the Executive Committee of the State Board of Health was held Monday, April 17, at 3:30 P. M., at Charleston Hotel, Charleston, with the following members present: Drs. Robt. Wilson, Chairman; C. C. Gambrell, E. A. Hines, W. J. Burdell, Wm. Egleston, W. M. Lester, W. W. Dodson and Jas. A. Hayne, Secretary and State Health Officer.

The first matter brought before the Board was the fact of the non-payment of the registrars of Charleston County, on account of an insufficient appropriation in the Supply Bill of Charleston County, \$800.00 being appropriated, and the amount due the registrars being \$1,305.00. A letter was read from the County Treasurer of Charleston County in which he enclosed a check for \$800.00 payable to the Secretary of the State Board of Health. A

letter from the Attorney General was also read, stating that the Secretary of the State Board of Health could not accept this \$800.00 and must return it to the Treasurer of Charleston County. After some discussion it was moved by Dr. Gambrell and seconded by Dr. Egleston that the Chairman and Secretary of the State Board of Health personally carry this correspondence to the Treasurer of Charleston County and make some arrangements for the payment of registrars. The Secretary called attention of the Board to the fact that several counties had not yet paid the registrars. Dr. Egleston moved that the State Health Officer be instructed to see the Attorney General and call upon him to take such action as he deemed wise to enforce the payment of the several counties.

A letter was read from Mrs. Remley, resigning her position as filing clerk with the Bureau of Vital Statistics. Mrs. Remley's resignation was accepted with regret, and the Secretary was instructed to draw up suitable resolutions expressing the appreciation of the Board for her services and the regret at her resignation. The vacancy caused by Mrs. Remley's resignation was ordered to be filled by the State Health Officer after consultation with Mr. C. W. Miller, Chief Clerk.

A letter was read from Mrs. Annie J. Rembert, and it was moved by Dr. Gambrell that Mrs. Rembert be generally recognized as publicity agent for the South Carolina Sanatorium, and that the Chairman and Secretary of the State Board of Health are hereby authorized to employ her as occasions may arise, making such arrangements with her for compensation as may be satisfactory, the payment being made out of the funds for the maintenance of the Sanatorium. The official title of the said office shall be Field Secretary for the South Carolina Sanatorium.

Dr. Fishburne appeared before the Board and requested that the reports of deaths from contagious diseases be sent to the Board of Health of Columbia. Dr. Fishburne stated that it was very necessary for the Board of Health to know of these diseases in order that they might obtain better reports of contagious diseases and be able to check physicians who did not report. The following resolution was then introduced by Dr. Burdell and passed:

*Resolved*, That the registrar and sub-registrar of the registry district of the City of Columbia be required to report in writing within twenty-four hours all deaths occurring within the city,



reported to them, to the City Health Officer of the city of Columbia.

It was moved by Dr. Egleston that on and after July 1, 1917, that all dispensers of drinks and ice cream shall comply with regulations to be adopted by the Executive Committee of the State Board of Health. Dr. Gambrell moved that a suitable ordinance be drafted and sent to the various cities in South Carolina which will be affected by this regulation.

Mr. T. I. Weston, of the firm of Weston & Brooker, appeared before the Board in regard to license of those persons manufacturing sewerage disposal plants. The following resolution was then introduced by Dr. Egleston and passed:

*"Be it enacted* by the Executive Committee of the State Board of Health under Act 419 that no septic tank system be installed in the State of South Carolina except by companies or corporations duly licensed by the Secretary of the State Board of Health, and that no license be issued for any system except to conform to the specifications to be investigated and compiled by the State Health Officer, and reported at the next regular meeting of the Executive Committee of the State Board of Health."

The report of Dr. Coward, Director of the Laboratory, for the first quarter was read and discussed, and Dr. Cooper's report for the year's work at the Sanatorium was read and also discussed.

A letter was read from Mr. C. W. Miller, Chief Clerk of the Bureau of Vital Statistics, requesting increase of salary. Dr. Gambrell moved that Mr. Miller's salary be increased to \$25 per month as long as funds permitted.

Bids were submitted by National Vaccine & Antitoxin Institute, Washington, D. C.; H. M. Alexander & Co., Marietta, Pa.; Lederle Antitoxin Laboratories, New York, N. Y., and H. K. Mulford Co., Philadelphia, Pa., on the following specifications:

First: We wish you to bid as to the price per point.

Second: We wish you to submit a plan by which the vaccine may be distributed at the least cost, and by which we may be able to have returned to us as many of the unused points as possible.

Third: That these points shall be delivered at this office in such quantities as we order, to be sent out from this office.

Fourth: That if the contract is awarded to your firm, that your firm will be the only firm from which the State Board of Health will purchase vaccine virus.

Fifth: That the payment for points purchased shall be made quarterly, and that credit shall be given for points returned at price originally purchased.

Sixth: That the State Board of Health reserves the right to accept the lowest or the highest, or to reject any and all bids.

Seventh: That the firm to whom the contract is awarded shall deposit a bond of one thousand dollars with the Secretary of the State Board of Health, for faithful performance of said contract.

Eighth: That all bids shall be sent to the Secretary of the State Board of Health on or before April 15, 1916; said bids to be opened in Charleston on April 17, 1916, at the meeting of the Executive Committee of the State Board of Health to be held on that date.

The bid of the National Vaccine & Antitoxin Institute was accepted, and the following contract was signed for the ensuing year:

Whereas, the South Carolina State Board of Health issued specifications requesting various biological laboratories to submit quotations for supplying the South Carolina State Board of Health with smallpox vaccine virus for a period of one year under certain rules and regulations.

And, whereas, certain biological laboratories submitted prices on the 17th day of April, 1916, through sealed proposals which were publicly opened, according to law, by the Executive Committee of the South Carolina State Board of Health, and after hearing all of said proposals, upon consideration, it was decided by the Executive Committee of the South Carolina State Board of Health that the proposal of the National Vaccine & Antitoxin Institute of Washington, D. C., to supply smallpox vaccine virus at six and one-half cents ( $6\frac{1}{2}$ ) per point or per tube and to establish a plan of distribution was the lowest and best bid, under all circumstances, and it appearing that this bid was legal in every respect, the proposal of the National Vaccine and Antitoxin Institute was accepted and the Secretary of the Board was instructed to notify the National Vaccine and Antitoxin Institute, Washington, D. C., of the Board's action and to enter into a contract with the said National Vaccine and Antitoxin Institute and to accept their bond in the amount of one thousand dollars (\$1,000.00) guaranteeing the above performance of this contract.



Now, therefore, this memorandum of agreement entered into this 17th day of April, A. D. 1916, by and between the Executive Committee of the South Carolina State Board of Health, party of the first part, and the National Vaccine and Antitoxin Institute of Washington, D. C., a corporation being incorporated under the laws of the District of Columbia, party of the second part.

Witnesseth:

1. The party of the first part agrees that the party of the second part shall have the exclusive right to supply all smallpox vaccine virus used by the South Carolina State Board of Health for a period of one year from date hereof.

2. The party of the first part agrees to pay six and one-half cents ( $6\frac{1}{2}$ ) per point or per tube for smallpox vaccine virus used by them or under their direction and to remit for same every ninety days.

3. In consideration of the exclusive right to supply smallpox vaccine virus, the party of the second part agrees to furnish smallpox vaccine virus on sterile ivory points or in capillary tubes, at such times and in such amounts as the party of the first part may direct, at a price of six and one-half cents ( $6\frac{1}{2}$ ) per point or per tube delivered.

4. The party of the second part further agrees to exchange without charge, other than the charge of transportation, any or all points or tubes upon which the potency date has expired for fresh vaccine virus.

5. The party of the second part further agrees to install a system at its own expense for the distribution of the said vaccine virus through the State and to maintain a clerk at a salary of forty dollars (\$40.00) per month, said clerk to be selected by the party of the first part, whose duties it shall be to take charge of the distribution of smallpox vaccine virus.

6. The party of the second part further agrees to any change or modification in the plan of distribution which the party of the first part may deem advisable or expedient.

7. The party of the second part further agrees to deposit with the Secretary of the South Carolina State Board of Health a surety bond on the amount of one thousand dollars (\$1,000.00) guaranteeing the above performance of this contract.

In Witness Whereof we have set our hand and affixed our seal this 17th day of April, A. D. 1916, in duplicate.

EXECUTIVE COMMITTEE, SOUTH CAROLINA  
STATE BOARD OF HEALTH,

By James A. Hayne, M. D., Secretary.

NATIONAL VACCINE AND ANTITOXIN INSTITUTE,

By J. Reverdy Stewart, Vice-President.

By C. F. McComas, Secretary.

The election of officers for the ensuing year resulted in the election of Dr. Robt. Wilson, Jr., as Chairman, and Dr. Jas. A. Hayne, Secretary and State Health Officer; the Standing Committees to be appointed by the Chairman before the regular meeting of the Board in July.

The Board then adjourned to meet again on Thursday, April 20, at the call of the Chairman.

JAMES A. HAYNE, M. D.,  
Secretary.

Attested.

Charleston, S. C., April 20, 1916.

The Executive Committee of the State Board of Health met at the call of the Chairman, Thursday, April 20, at 8:30 P. M., at Charleston Hotel, Charleston, with the following members present: Drs. Robt. Wilson, Chairman; C. C. Gambrell, E. A. Hines, W. J. Burdell, Wm. Egleston, and Jas. A. Hayne, Secretary and State Health Officer.

Report of Mr. Jos. LePrince, Sanitary Engineer U. S. P. H. Service, on the malarial conditions existing at St. Helena Island was read and received as information.

Dr. W. A. Boyd, registrar for the registration district of Columbia, appeared before the Board and protested against the resolution adopted by the Board at its last meeting. The Board then, after hearing Dr. Fishburne, substituted the following regulation to be known as Regulation 2(a) for the resolution adopted at the meeting of the Board on April 17, 1916:

"Regulation 2(a). The registrar and sub-registrars of any incorporated town or city of South Carolina shall permit the daily inspection of the vital statistics records for that city or town by members of the local Board of Health, or other authorized agents."



There being no further business the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,  
Secretary.

Attested.

Columbia, S. C., July 13, 1916.

The regular meeting of the Executive Committee of the State Board of Health was held Thursday, July 13, at 9:30 A. M., at the offices of the Secretary, Palmetto Bank Building, with the following members present: Drs. Robt. Wilson, Jr.; Chairman; D. B. Frontis, C. C. Gambrell, E. A. Hines, W. J. Burdell, Wm. Egleston, W. M. Lester, W. W. Dodson, and Jas. A. Hayne, Secretary and State Health Officer.

The minutes of the last meeting were read and approved.

The first business before the Executive Committee was the discussion of regulations governing the installation of septic tanks in South Carolina. These regulations were compiled in response to resolution adopted at the last meeting in Charleston, April 17, 1916. Dr. Egleston moved that these rules be not considered at the present time, but that pending further action of the Executive Committee, permits be issued only upon recommendation by the State Health Officer or his authorized agent, after such tanks have been inspected and the location with respect to water supply, etc., approved.

A petition was read from certain citizens of Greenville to appoint one John S. Taylor of that city as Registrar of Vital Statistics. Dr. Egleston moved that this petition be received as information, and that Drs. Dodson and Hayne be appointed as a committee to report upon this petition at the next meeting.

Mrs. Annie I. Rembert appeared before the Executive Committee and gave an account of her activities for the South Carolina Sanatorium. It was moved by Dr. Gambrell that Mrs. Rembert, before preparing any articles for publication, should consult with the Superintendent and the State Health Officer and use such data as they may furnish her.

The Executive Committee entered into a discussion in regard to the prevalence of Anterior Poliomyelitis and the probability of its spread in this State. The Secretary was directed to communicate with each local board of health and to prepare and publish pamphlets, bulletins and such other data as he may deem necessary in order to prevent the spread of this disease. It

was moved and seconded that Dr. F. A. Coward be directed to proceed to New York and make a study of the methods used there to prevent the spread of Anterior Poliomyelitis.

The following resolution was introduced by Dr. Egleston, and passed:

*"Resolved*, That the Secretary be instructed to proceed to the organization of a State Association of Health Officers and Boards of Health, of which this organization shall become a member. That the initial meeting be held during the month of August, and that the annual meetings of the organization so formed shall become stated and regular meetings of this board."

Dr. L. A. Riser was elected as Director of Rural Sanitation, his duties being to take charge of the community units and to perform such other duties as will assist the Secretary of the State Board of Health; his salary to be paid one-half by the State Board of Health and one-half by the Rockefeller Commission, said salary to be \$2,000 per annum and \$900 for traveling expenses.

There being no further business the Executive Committee adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,  
Secretary.

Attested.

Columbia, S. C., August 2, 1916.

The Sub-Committee of the Executive Committee of the State Board of Health for the Erection and Maintenance of a Tuberculosis Hospital convened at 11 A. M., Wednesday, August 2, at the offices of the Secretary, Palmetto Bank Building, with the following members present: Drs. W. J. Burdell, Wm. Egleston, C. C. Gambrell and Jas. A. Hayne, Secretary and State Health Officer.

The object of this meeting was to accept the Woman's Ward of the South Carolina Sanatorium from the contractors. The Committee went in a body to the Sanatorium and inspected and accepted the building of the Women's Ward. They also inspected the Men's Ward and the Administration Building, and the grounds, and found everything in a satisfactory condition.

There being no further business the Committee adjourned.

JAMES A. HAYNE, M. D.,  
Secretary.

Attested.



Isle of Palms, S. C., August 21, 1916.

A special meeting of the Executive Committee of the State Board of Health was held Monday, August 21, at 11 A. M., at the Pavilion, Isle of Palms, S. C., with the following members present: Drs. W. J. Burdell, W. W. Dodson, Wm. Egleston, C. C. Gambrell, E. A. Hines, W. M. Lester and Jas. A. Hayne, Secretary and State Health Officer.

The object of this meeting was the organization of an Association of Local Boards of Health of South Carolina. It was a very successful meeting and a permanent organization was perfected and Dr. C. E. Low, of Spartanburg, was elected President and a committee was appointed to draw up the constitution and by-laws for the Association.

The Secretary was directed to communicate with Mr. Ramsey, of Greenville, in regard to violation of quarantine laws in that city.

There being no further business, the Committee adjourned.

JAMES A. HAYNE, M. D.,  
Secretary.

Attested.

Columbia, S. C., October 18, 1916.

The regular quarterly meeting of the Executive Committee of the State Board of Health was held Wednesday, October 18, at 9:30 A. M., at the offices of the Secretary, Palmetto Bank Building, with the following members present: Drs. Robt. Wilson, Jr. (Chairman), D. B. Frontis, C. C. Gambrell, E. A. Hines, W. J. Burdell, Wm. Egleston, W. M. Lester, W. W. Dodson and Jas. A. Hayne, Secretary and State Health Officer.

The minutes of the last meeting were read and approved.

The first business before the Executive Committee was the consideration of the failure of H. M. Alexander & Co. to comply with their contract in furnishing diphtheria antitoxin. Propositions were offered by Lederle Antitoxin Co., of New York; E. R. Squibb & Sons, of New York; Abbott-Slee, of Chicago, and the National Vaccine & Antitoxin Institute, of Washington, D. C. The State Health Officer was empowered to enter into a contract with one of these firms to carry out the provisions of the H. M. Alexander & Co.'s contract. The State Health Officer was directed to submit the contract with H. M. Alexander & Co. to the Attorney-General to determine whether the bond of \$1,000 was forfeited by them or not.

A petition was presented from Great Falls, S. C., and signed by one-fourth of the qualified electors, as required by law, and the Executive Committee agreed to organize a local Board of Health at Great Falls, and the Secretary was directed to commission the following members: Dr. J. B. McKeown, J. R. P. Gibson, Robt. S. Mebane, H. B. Mebane, Dever Little, W. F. Morton and W. H. Hancock.

A bill was presented by Wm. Banks, editor of The Record, for services rendered in the publicity campaign for the tuberculosis sanatorium. The bill was for \$25.00 and the Secretary was directed to pay same out of the funds for the tuberculosis sanatorium.

Dr. Gambrell moved that a sub-committee of three members, to be appointed by the Chairman, the Chairman to be one of the number, be appointed to have a full discussion with Dr. Ernest Cooper, Superintendent of the South Carolina Sanatorium, and lay down such rules and regulations as the committee may agree upon for the better management of the institution, and this committee make a full report at the next meeting. The Executive Committee then took a recess until 10 A. M. the following day.

JAMES A. HAYNE, M. D.,  
Secretary.

Attested.

Columbia, S. C., October 19, 1916.

The Executive Committee of the State Board of Health convened, with the following members present: Drs. Robt. Wilson, Jr. (Chairman), C. C. Gambrell, W. J. Burdell, W. M. Lester and Jas. A. Hayne, Secretary and State Health Officer.

Routine business was discussed and the following standing committees were appointed by the Chairman:

Ordinances and Sanitary Code—Jas. A. Hayne, Wm. Egleston, Thos. H. Peeples.

Sanitary Condition of State Penal and Charitable Institutions—C. C. Gambrell, Wm. Egleston, W. M. Lester.

Sanitary Inspection of Schools—E. A. Hines, W. J. Burdell, D. B. Frontis.

The Executive Committee went to the Court House, Richland County, to give testimony in the case of Graham against The



State of South Carolina in suit to recover damages for the closing of the hosiery mill at the State Penitentiary.

The Executive Committee adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,  
Secretary.

Attested.

Columbia, S. C., December 14, 1916.

The regular quarterly meeting of the Executive Committee of the State Board of Health was held Thursday, December 14, at 9:30 A. M., at the offices of the Secretary, Palmetto Bank Building, with the following members present: Drs. Robt. Wilson, Jr. (Chairman), D. B. Frontis, C. C. Gambrell, E. A. Hines, W. J. Burdell, Wm. Egleston, W. M. Lester, W. W. Dodson and James A. Hayne, Secretary and State Health Officer.

The minutes of the last meeting were read and approved.

The first business before the Executive Committee was the reading of communications. A letter was read from Mr. Boyden Nims, in regard to the analysis of city water, and the Secretary was directed to reply to this letter and quote the Act of the General Assembly governing this matter for his information. It was moved, and seconded by Dr. Gambrell, that Dr. F. L. Parker be requested to send the opinion of his lawyer upon which he bases the charge for both bacteriological and chemical work, and that this opinion be submitted to the Attorney-General by the State Health Officer, and he be asked whether he agrees with this opinion.

The next business was the report of the different departments. The General Report—Epidemic and Endemic Diseases—by Jas. A. Hayne, M. D., Secretary State Board of Health and State Health Officer. Report of the Laboratory, by F. A. Coward, M. D., Director. Report of the Bureau of Vital Statistics, by C. W. Miller, Chief Clerk. Report of the Analysis of Water, by F. L. Parker, State Chemist and Bacteriologist. Report of the Committee on State Penal and Charitable Institutions, by C. C. Gambrell, M. D., Chairman. Report of the Committee on Sanitary Inspection of State Schools and Colleges, by E. A. Hines, M. D., Chairman. Report of the South Carolina Sanatorium at State Park, by Ernest Cooper, M. D., Superintendent. Report of the Field Secretary for the South Carolina Sanatorium, by Mrs. Annie I. Rembert. Report of the Director of Community Units,

by L. A. Riser, M. D. Report of the Richland County Health Officer, by H. M. Smith, M. D. Report of the Greenville County Health Officer, by S. J. Taylor, M. D.

The Executive Committee heartily commends the work done by Dr. S. J. Taylor and recommends that he be given two inspectors to assist him in carrying out the work being done by him and the United States Public Health Service in Greenville County.

All the reports were received as information and the Secretary was directed to have them printed in the annual report.

The next business before the Executive Committee was a committee of citizens from Colleton County in regard to an epidemic of malaria prevailing in Broxton Township, Colleton County. Dr. H. W. Rice, of Columbia, explained fully the conditions there, and it was moved and seconded that a commission be appointed to thoroughly investigate these conditions and make recommendations.

The next business was a joint meeting of the Local Board of Health of Columbia with the State Board of Health. The business of this meeting was to discuss what steps should be taken to safeguard the city of Columbia against the sale of meat harmful to the health of the citizens. A committee consisting of Drs. Hayne and Fishburne were appointed to draw up regulations under Act 419 that would meet the conditions and not exceed the legal rights of the State Board of Health.

Dr. Egleston moved that the following matters be submitted to the Committee on Public Health and Legislation of the South Carolina Medical Association for their consideration and action, the same to be taken up at the meeting of the General Assembly: First, Section 1604 of the Code to be abolished; second, that a law be passed requiring penal, charitable and educational institutions of the State to submit samples of their water supply to the Laboratory of the State Board of Health for examination.

It was moved and seconded that a committee consisting of the Chairman and the Secretary should endeavor to make satisfactory arrangements whereby the services of Dr. L. A. Riser should be retained for the Board.

The recommendations contained in the report of the Secretary and State Health Officer were approved by the Executive Committee, and he was directed to take the necessary steps to see that the said recommendations were carried out.



There being no further business the Executive Committee adjourned.

JAMES A. HAYNE, M. D.,  
Secretary.

Attested.

## CONCISE REPORT OF WORK OF STATE HEALTH OFFICER.

I submit a concise report of the work of the State Health Officer, giving the dates of his trips and the cause of such trips:

January 3-4—Trip to Anderson—Lecture to trained nurses.

January 5—Trip to Princeton—Investigation of smallpox.

January 6—Trip to Greer—Inspection of sewerage plant.

January 6-7—Trip to Laurens—Lecture to mill school.

January 11—Trip to Johnston—Lecture to Eighth District Medical Association.

January 15—Trip to Charleston—Lecture to South Carolina Medical Association.

February 3-6—Trip to Colleton—Inspection of Saltkehatchie Swamp.

February 16-17—Trip to Bamberg—Investigation of smallpox.

February 22—Trip to Denmark—Lecture to public school.

February 23—Trip to Barnwell—Lecture to graded school.

March 1—Trip to Winnsboro—Witness in suit against Parr Shoals Co.

March 2—Trip to Estill—Lecture by request of the Mayor.

March 7-8—Trip to Rock Hill—Inspection of Winthrop College by request.

March 9—Trip to Winnsboro—Witness in suit against Parr Shoals Co.

March 15-16-17—Trip to Greenville—Sanitary inspection.

March 21-22—Trip to Edgefield—Witness in suit against Georgia-Carolina Power Co.

March 23-24—Trip to Brunswick, Ga.—Meeting of Southeastern Sanitary Association.

April 1—Trip to Greenville—Sanitary inspection.

April 3-4—Trip to Abbeville—Lecture to Farmers' Club.

April 11-12—Trip to Greenville—Sanitary inspection.

April 16-22—Trip to Charleston—Meeting of the South Carolina Medical Association.

May 2-3—Trip to Sumter—Sanitary inspection and lecture to Civic League.

May 3-4—Trip to Conway—Sanitary inspection.

May 4-5-6—Trip to Greenville—Sanitary inspection of mills and lecture in Fairview school.

May 10-11—Trip to Conway—Sanitary inspection and advice as to installation of sewerage.

May 12—Trip to Newberry—Official testimony in suit against Parr Shoals Co.

May 12-15—Trip to Washington, D. C.—Annual conference with Surgeon General and State Health Officers.

May 16-18—Trip to Washington, D. C.—Conference of State and Provincial Boards of Health.

May 22-23—Trip to Fort Mill—Diagnosis of suspected case of meningitis.

May 19—Trip to Red Knoll—Lecture to Red Knoll school.

May 26—Trip to Turbeville—Inspection of Gibbons-Lavender millpond.

May 31—Trip to Hartsville—Sanitary inspection.

June 5-6—Trip to Winston-Salem, N. C.—Meeting of Eighth District Medical Association.

June 7-8-9—Trip to Washington, D. C.—Consultation United States Hygienic Laboratory in regard to septic tank.

June 11-17—Trip to Detroit, Mich.—Meeting of American Medical Association.

June 23—Trip to Sumter—Investigation of typhoid fever.

August 17-18—Trip to Washington, D. C.—Conference of United States Public Health Service with State Health Officials.

August 20-22—Trip to Isle of Palms—Meeting of State and Local Boards of Health.

August 25—Trip to Clover—Investigation of pond.

August 27-29—Trip to Greenville—Consultation in regard to sewage disposal plant.

September 3-5—Trip to Greenville—Lecture to the Trustees of Greenville County School.

October 3-5—Trip to Greenville—Health Day.

October 6—Trip to Conway—Inspection of proposed sewerage plant.

October 12—Trip to Blackville—Lecture at chautauqua.

October 19—Trip to Sumter—Investigation of infantile paralysis.



October 23-28—Trip to Cincinnati, O.—Meeting of American Medical Public Health Association.

November 12-17—Trip to Atlanta, Ga.—Meeting of Southern Medical Association.

November 21-22—Trip to Newberry—Official testimony in suit against Parr Shoals Company.

December 14-16—Trip to Charleston—Lecture to South Carolina Medical College.

December 18-19—Trip to Greenville—Consultation with committee, Chamber of Commerce.

## REPORT OF DIRECTOR OF LABORATORY.

F. A. COWARD, M. D.

Columbia, S. C., January 1, 1916.

*To the Chairman and Members of the Executive Committee,  
South Carolina State Board of Health:*

Gentlemen: I submit herewith my report of work done in your laboratory during the year 1916:

### PERSONNEL.

The laboratory force has consisted of one director, one bacteriologist, stenographer, and porter. For a short period during the summer, and for two days during December, it was necessary to employ additional help. This necessity was met by the employment of Mr. Baxter Owings, as technician. The amount of work now demanded of the laboratory exceeds the abilities of two men and a permanent addition must be made to the laboratory staff if the present scope of work is to be covered. I ask therefore for the appointment of a graduate physician as assistant bacteriologist. A physician is necessary, as many problems arising during the absence of the Director can be met only by a physician.

The additional assistant in the laboratory would be a trained investigator who would have ready at all times a portable emergency outfit, and would be always prepared to spend as much time as necessary at the scene of the trouble, and would remain until his work could be completed. This would bring our laboratory close to the rural people and would give modern laboratory facilities to those who are most in need of them at present, and give just return for their tax money to the rural people.

## PHYSICAL CONDITION OF THE LABORATORY.

Practically no repairs were needed during the past year—a little will be needed during the coming year. A small sum could well be expended for furniture—most of the furniture in use since the laboratory was opened is the property of the Director, and is now worn out. A few pieces of apparatus will be needed in the laboratory, but the expense of these will not exceed \$500.00.

## DIAGNOSTIC WORK.

With the exception of Wassermann tests, all diagnostic work was attended to by Mr. Cain, with his usual promptness and faithfulness. An increase in the amount of this work is to be noted. Additional help will enable us to institute centrifugal methods in the examination for tubercle bacilli, malaria parasites and intestinal parasites. This is much to be desired.

## TYPHOID VACCINE.

Thirty-one thousand eight hundred and twenty-nine ampoules of typhoid vaccine were sent out during the year. This service is now so well established that no comment is necessary. We have never had adequate facilities for furnishing the vaccine in large quantities, but have done the best possible with the means at hand. During the coming year a mixed vaccine, containing both paratyphoid organisms as well as the typhoid bacillus will be furnished, the recent experience of the United States and European armies having shown that paratyphoid fevers are a definite menace to health and life. The large number of positive paratyphoid tests in our laboratory shows that our State is in need of protection against these fevers.

## PASTEUR DEPARTMENT.

The year 1916 has been a discouraging one in this work. The Director cannot refrain from inserting here a quotation from his report to you, rendered one year ago:

"However, it is not likely that we shall see any marked decrease in the existence of this disease in our State in the near future. As stated in these reports before, the preventive treatment undoubtedly keeps down to a minimum the human cases, but in no way diminishes the economic loss to the State caused by the disease in stock and valuable animals, nor does it prevent the constant exposure of persons to the attacks of possibly rabid



animals, with the consequent fear and suffering. The disease is practically endemic with us and *a dangerous epidemic outbreak of large proportions, which may result in many human deaths, may occur at any time.* I will again urge that your Board interest itself in securing the passage of a State-wide registration law for dogs, the law to be enforced by local health officers and game wardens, in addition to the ordinary police officers."

In the light of this year's experience this reads like prophecy—not only have we had the greatest number of patients of any year since the foundation of the laboratory (nearly 400), but there have been three deaths from rabies. Two of these developed the disease after so short a period of incubation that they cannot be considered failures of the Pasteur treatment. The third case developed thirty days after treatment, but as this case did not begin treatment for over ten days after being infected, it, too, cannot be considered a failure of treatment. The important point is that all three children are dead, and needlessly dead of a preventable disease. It has been our yearly custom to urge certain legislation on this subject, but as no attention is ever paid to it, we shall be content to ask that our suggestions of the past seven years be acted on.

Supplementing the above remarks are the attached tabular statements of the year's work.

Respectfully submitted,

F. A. COWARD, M. D.,  
Director of Laboratory.

#### SUMMARY OF LABORATORY WORK FOR THE YEAR 1916.

Kind of Specimen or Examination.	Positive.	Negative.	Doubtful.	Total
Sputa for B. Tuberculosis.....	193	690	...	883 ✓
Hookworm Ova .....	121	416	...	537 ✓
Rabies .....	173	89	3	265 ✓
Gonococcus .....	17	51	...	68 ✓
B. Diphtheria .....	52	221	...	273 ✓
B. Coli in Water.....	168	103	...	271 ✓
P. Malaria .....	28	353	...	381 ✓
T. B. in discharges other than sputa.	1	24	...	25 ✓

#### Miscellaneous Intestinal Parasites Other Than Hookworm.

Ameba .....	...	33	...	33 ✓
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#### Miscellaneous Pathogenic Organisms.

Meningococcus .....	2	...	...	2 ✓
Diplococcus .....	1	...	...	1 ✓

**Cultures.**

Culture from Pus.....	2	2	...	4
Culture from Spinal Fluid.....	1	...	...	1
Blood Culture for B. Anthraxis.....	...	1	...	1
Culture from Pus for Staphylococcus.....	1	...	...	1
Culture from Pus for B. Typhosus.....	...	1	...	1
Bile Cultures.....	1	1	...	2
Blood Cultures.....	1	1	...	2
Cultures from Duodenal Contents for B. Typhosus.....	1	1	...	2
Miscellaneous Specimen for Bacteria.....	1	1	...	2
Pus from Eye for Bacteria.....	...	1	...	1
Smear from Pus for Bacteria.....	...	1	...	1
Total.....	764	1990	3	2757

**Widal Tests.**

B. Typhosus.....	715	2128	70	2913
Paratyphoid.....	333	2563	17	2913
Total.....	1048	4691	87	5826
Combined Totals.....	1812	6681	90	8583

**Typhoid Vaccine.**

Number of Ampuls sent out during year 1916..... 31,829

**Wassermann Tests.**

April 15, 1916-January 1, 1917.

	Positive.	Negative.	Total.
Blood.....	423	1332	1755
Spinal Fluid.....	2	34	36
Total.....	425	1366	1791
Number of specimens hemolyzed when received.....			10

**Pasteur Treatment.**

Total number of patients receiving treatment..... 399

**Location of Bites.**

Face and Neck.....	20
Hand and Foot.....	106
Through Clothing.....	9
Leg and Arm.....	44
Doubtful Whether Bitten.....	14
No Information.....	206
Total.....	399

**Where Treated.**

Treated at Home.....	357
Treated at Laboratory.....	42
Total.....	399

Number of Deaths from Hydrophobia..... 3

Number of Failures of Pasteur Treatment..... 0

## REPORT OF COMMITTEE ON SANITARY INSPECTION OF STATE SCHOOLS AND COLLEGES, 1916.

CEDAR SPRINGS INSTITUTE FOR DEAF, DUMB AND BLIND.

Since our last annual inspection this institution has been by constitutional amendment classed as an educational institution and hence now comes under the supervision of this committee. The visit was made November 24, and while the investigation was not exhaustive, we found evidence of progress along sanitary lines.

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570



Plans are under way for remodelling the administration building, which will add much to the efficiency of that department.

The management shows a marked care for the health of the children, and with good results. Up to the time of our visit a physician had not been called in the two months the session had been running.

The arrangement for skilled attendance is satisfactory in case of acute illness, but we would strongly recommend a systematic medical and dental inspection at least once a year of every child in the institution, on the ground that these already defective children should especially have the benefit of the most advanced scientific knowledge available.

E. A. HINES, M. D.,  
Chairman.

#### THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.

The Medical College was inspected December 2nd, and from a sanitary standpoint the committee was unable to suggest anything of importance, there being little to criticise. We wish to especially commend, however, the important step the college has taken in reference to creating a Chair of Public Health and the Public Health Extensive Work of the Research Department. Such a step means much for the advancement of preventive medicine in South Carolina.

By invitation, the Chairman addressed the students on "Infant Mortality An Urgent Problem In Our State."

E. A. HINES, M. D.,  
Chairman.

#### CLEMSON COLLEGE.

The committee visited Clemson College November 28th and noted the health of the cadets as being especially good for the current term. Malaria less than usual. In general, the sanitary conditions were satisfactory. At the present time the cost of food supplies is a serious factor in the conduct of these large institutions, but by wise foresight the authorities have not found it necessary to modify the diet or increase the cost for board.

E. A. HINES, M. D.,  
Chairman.

## THE CITADEL.

The Citadel was visited December 7th. There were no cases of illness at the time of our visit and the report of the surgeon would appear to indicate that the health of the Cadet Corps has been exceptionally good. As at Clemson, we noted less malaria than usual. The committee investigated the food supply very carefully in order to determine the effect of the high prices prevailing, and was pleased to find this eminently satisfactory. In fact, the entire management of the Citadel deserves commendation.

E. A. HINES, M. D.,  
Chairman.

## WINTHROP COLLEGE.

The visit to Winthrop College was made December 13th. This great school now enrolls more than one thousand pupils and while such a large community necessarily involves complex sanitary problems, the situation has been met in an admirable manner. Winthrop College is a model in all that modern sanitation stands for and therefore is a great asset to the State along public health lines through its graduates.

We strongly recommend a new cow barn for the dairy department.

We desire to call especial attention to the completion of one of the most up-to-date gymnasiums to be found.

Owing to the increasing demand from those who would enter the institution, there is some overcrowding, and therefore a new dormitory will at an early date be a necessity.

The Chairman of the committee addressed the student body on the subject, "The Home the Strategic Point of Attack in Rural Sanitation."

E. A. HINES, M. D.,  
Chairman.

W. J. BURDELL, M. D.

## THE STATE NORMAL AND INDUSTRIAL COLLEGE AT ORANGEBURG.

December 12, the State Normal and Industrial School at Orangeburg was visited. The two main buildings are substantial brick structures, well ventilated and apparently well heated, with fire escapes on rear and two sides accessible from each floor and a large rope with attachment firmly embedded in masonry wall in each room.



The entire buildings were clean and toilets and baths for females in excellent sanitary condition. Owing to the burning of Morrill Hall, the old male dormitory, a few weeks ago, the male students are not now adequately provided for in reference to toilets and baths. A new building to replace the burned one is a necessity and it is to be hoped that the incoming Legislature will appropriate sufficient funds for the erection of a substantial building, properly lighted and heated, with toilet and shower bath facilities.

Dining room was very clean and free of flies; kitchen in fair condition; dairy and milking barn in excellent condition. Inspected at 9 A. M., milking shed had been thoroughly flushed, was clean and dustless. Milking buckets and all utensils and machinery in dairy were clean.

The institution has the same water supply as the city of Orangeburg, which is examined at stated intervals by the State Chemist.

Seven hundred and ninety-two students have matriculated this year and not a single case of any communicable disease has developed. Dr. Lowman is the visiting physician and very carefully looks after all cases of sickness.

D. B. FRONTIS, M. D.

#### UNIVERSITY OF SOUTH CAROLINA.

December 13th, the University of South Carolina was inspected. Toilets were found to be in excellent condition. There has been a great improvement since the last inspection in the installation of running water and sinks on each floor of all the old buildings. Formerly the janitors had to carry out slops and bring water for all rooms. This system of running water and sinks allows more time for properly cleaning and taking care of bedrooms of students. The mess hall, including dining room and kitchen, has been enlarged, a new range and dish-washing machine installed and all found in good sanitary condition.

December 13th, infirmary visited. There has been no communicable disease this session. We think it wise to have one porch enclosed in glass, ordinarily to be used as a sun parlor, but in case of more than one epidemic or communicable disease this sun parlor could be used to isolate such patients. At present there is only one ward for contagious diseases and if more than one contagious disease should exist at the same time there is no

way to separate the cases. The expense of this work would be negligible in comparison with the advantages to be gained.

The water supply is the same as used by the city and the sewage is discharged into city mains.

D. B. FRONTIS, M. D.

## REPORT OF COMMITTEE ON SANITARY INSPECTION OF STATE PENAL AND CHARITABLE INSTITUTIONS, 1916.

### STATE HOSPITAL FOR THE INSANE.

Your committee has inspected the State Hospital several times during the year and it is pleased to report extensive improvements in many ways. One of the most notable improvements is the manner in which the Medical Department is conducted. All the members of the medical staff are now resident officers and devote their entire time to the work. Daily staff meetings, except Sunday, are held, and all patients received are carefully examined, both physically and mentally. The information obtained is typewritten, bound in neat form and will prove of great value to the hospital as permanent records.

Among the permanent improvements which have been undertaken, some of which are now nearing completion, are the remodeling of eleven of the white male wards, the erection of a central kitchen with new equipment, the building of a congregate dining rooms for white female and male patients, a new dairy and the installation of a cold storage and ice plant.

Your committee desires to express its gratification at the improvements found, which meet the modern idea of sanitation in every respect.

We find that many temporary improvements have been made, which add materially to the care and comfort of the patients.

All open cases of tuberculosis in the various departments have been isolated and are being cared for on open-air porches adjacent to the wards. This arrangement, while an improvement, is not, in the opinion of your committee, sufficient to meet the needs of this class of patients; they should be cared for in pavilions specially constructed for them.

*Female Department.*—We found that all of the female wards in the main building are still overcrowded and in unsanitary condition, and this is made more apparent since this completion of



the new ward on the male side; therefore we recommend that the remodeling of the female wards be done as soon as possible. We are glad to note the remarkable decrease of the death rate of the institution for the past year, and we are quite certain that it, in part, can be attributed to recent sanitary fixtures and close attention to sanitary measures in the institution. We most heartily commend the activities along public health lines in this institution, and recommend that the Legislature give them such financial aid as is necessary to carry out the previously planned policy of the institution.

#### PENITENTIARY.

Your Committee on State Penal and Charitable Institutions beg leave to make the following report:

We have visited the penitentiary and found conditions there not changed any during the past year. We found within the prison walls 141 male prisoners and 25 female prisoners. There are twelve patients in the hospital, and of the twelve three were confined to bed. The general health of the convicts seemed to be good. The hospital building was clean and tidy, but the windows have not been screened as recommended last year. We would again recommend that this matter be attended to.

*Tuberculosis Hospital at Penitentiary.*—We found in this building twelve patients that were reported to be doing well, and would soon be able to return to work. We are glad to note that the authorities are taking interest in this building and using it a great deal more than formerly.

*Women's Quarters.*—This building, as it has been in the past, is still in an unsanitary condition. We have no recommendations to make that will improve conditions in this building, but would suggest that the penitentiary authorities construct, out of the material on the ground, a prison building for females according to the latest recommendations of sanitary engineers.

*Old Guard Quarters.*—This is an old frame building within the fire range of the women's quarters, and we would recommend that it be torn down.

C. C. GAMBRELL, M. D.

Chairman.

W. M. LESTER, M. D.

W. EGGLESTON, M. D.

## REFORMATORY FOR NEGROES IN LEXINGTON COUNTY.

Columbia, S. C., December 8, 1916.

The committee begs leave to report that they have examined the State Reformatory for Negroes in Lexington County.

They find the location a healthy one. The institution is in clean sanitary condition and the inmates well cared for and vigorous.

The diet seems excellent and its sufficiency is attested by the very small amount of sickness the institution has and the physical condition of the inmates.

It is especially to be noticed and commended that under its very excellent management this place maintains itself without cost to the State.

The few suggestions to be offered by your committee are for perfecting its sanitary arrangements and for adding to the worth of the inmates:

First, the shower bath floors on two of the floors of the main building should be relaid in cement and the leakage stopped.

Second, the kitchen should be enlarged and should be better equipped and should be thoroughly screened.

Third, the entire main building should be well screened.

Fourth, the drinking water of this, as of all State institutions, should be submitted for chemical and bacteriological examination at stated periods to our State Bacteriologist.

Respectfully submitted,

C. C. GAMBRELL, M. D.,  
Chairman.

W. M. LESTER, M. D.

WM. EGGLESTON, M. D.

## INSPECTION OF OLD SOLDIERS' HOME.

During the month of December I visited and inspected the Old Soldiers' Home. Capt. Wardlaw, the commandant, very courteously showed me around through the various departments of the Home. I found that the place was kept as clean as it could be, considering the class of inmates. The food was nourishing, well prepared and of good quality. During the past year, a system of sewerage has been installed, which empties into a modern septic tank which was approved by the State Board of Health. I found that great improvement could be made in the milking. They have four cows, which I am told furnish sufficient



milk for the inmates, but the lot where these cows are kept and the place where they are milked are far from being sanitary, or as clean as they ought to be, especially in bad and wet weather.

One of the most urgent needs of the Old Soldiers' Home is increased hospital facilities. As the years go by the inmates become more and more feeble and helpless, and the institution is beginning to be more of a hospital than a home. The committee would recommend an appropriation for increasing the capacity and improving the hospital facilities.

The general health of the inmates seem to be fairly good, and apparently they were satisfied.

C. C. GAMBRELL, M. D.,  
Chairman.

W. M. LESTER, M. D.

WM. EGLESTON, M. D.

#### STATE REFORMATORY.

Florence, S. C., November 26, 1916.

Your committee examined the State Reformatory on this date and begs to report as follows:

The general conditions are much improved over last year at this time because of the reduction of the number of the inmates from 260 to 160, its normal capacity. There has also been much work done on the dormitories, which makes them much cleaner and neater in appearance. The general sanitary conditions are good, and is good as is possible perhaps under the present circumstances. From the reports of the superintendent of the institution, the amount of sickness is strikingly small, and the entire corps looks healthy and vigorous.

The recommendations to be made are but repetitions of those of the last two years, but they are none the less important and urgent:

First, the diet should be more varied and more liberal as to fresh meat, eggs and milk. There seems no good reason why this institution, if relieved of the burden of actually paying for a great part of its property, could not produce all the food stuffs used, as is done on the property of the negro institution of a like kind.

Second, the closets need and should have a reliable automatic flushing arrangement.

Third, the need of a large new dining room and an entirely new kitchen with new equipment is an urgent one. Conditions are not and cannot be made sanitary under present arrangements.

Fourth, future building at the institution should be done after consultation with the State Health Officer, as well as the architect. Much of the cement flooring and cement construction is insanitary, hard to clean and unsuitable for dining rooms, school room and dormitory.

Fifth, the institution's newly installed water supply makes it imperative that a sample be submitted at regular short intervals to the State Bacteriologist for examination.

C. C. GAMBRELL, M. D.,  
Chairman.

W. M. LESTER, M. D.

W. EGLESTON, M. D.

## REPORT OF BUREAU OF VITAL STATISTICS.

*Dr. James A. Hayne, Secretary State Board of Health, Columbia, S. C.*

Dear Dr. Hayne: Herewith please find my report for the ten months ending October 31st, 1916.

You will note that the births for this year have increased 1,259, while the deaths have decreased 2,035. Owing to the delay in paying the registrars, the returns fell off considerably for the four months, January to April, but when payment was at last made the registrars took renewed interest in the work, gathered up delayed certificates and forwarded them to this office.

There are several factors, in my opinion, that contributed to the decrease in deaths: First, the educational work of the State Board of Health is beginning to bear fruit. The people are awakening to the truth that "an ounce of prevention is worth a pound of cure." They realize that proper sanitation means less sickness and a consequent decrease in the death rate. Second, the weather conditions this year have been exceptionally good. Third, the financial conditions are better than in 1915. People are enabled to procure a greater variety of wholesome food and warmer clothing, which increases their resistant powers to disease.

The doctors are co-operating more fully than they did last year, but there is still much to be desired. For example, I sent out a month ago about two hundred letters, asking for information desired in Washington. I wrote courteous letters, enclosing a stamped envelope to each, and asked them to answer on my letter at their earliest convenience. There are about fifty that I



have had no reply from and this entails additional correspondence and expense.

Registration is still poor in Barnwell, Saluda, Fairfield and one or two other counties. I cannot get registrars in these counties to take an interest in the work. Correspondence has no effect and often my letters are never answered.

About the same number of packages of supplies were sent out this year as in 1915.

The office force consists of Miss Washington, file clerk; Miss Rouquie, stenographer, and Miss Cain, index clerk. They have co-operated finely in the work of the office and I hope the appropriation will allow for an increase in their salaries.

Very truly yours,

C. W. MILLER,  
Chief Clerk.

**TOTAL NUMBER OF BIRTHS AND DEATHS FOR SOUTH CAROLINA  
FROM JANUARY 1, 1915, TO OCTOBER 31, 1915.**

Counties.	Deaths.	Births.	S. Births.
Abbeville .....	389	825	47
Aiken .....	427	693	45
Anderson .....	837	1,629	47
Bamberg .....	207	355	28
Barnwell .....	286	538	43
Beaufort .....	471	463	66
Berkeley .....	347	577	51
Calhoun .....	251	496	46
Charleston .....	2,075	1,732	258
Cherokee .....	293	724	14
Chester .....	412	729	31
Chesterfield .....	265	818	31
Clarendon .....	400	1,027	74
Colleton .....	378	710	47
Darlington .....	497	1,115	77
Dillon .....	264	511	27
Dorchester .....	210	351	34
Edgefield .....	345	640	36
Fairfield .....	266	676	30
Florence .....	678	1,502	122
Georgetown .....	399	437	44
Greenville .....	1,028	1,884	102
Greenwood .....	463	754	34
Hampton .....	149	387	30
Horry .....	343	1,026	57
Jasper .....	116	236	7
Kershaw .....	285	608	34
Lancaster .....	329	720	29
Laurens .....	501	925	53
Lee .....	326	769	42
Lexington .....	295	633	41
Marion .....	304	650	36
Marlboro .....	421	798	56
Newberry .....	374	750	40
Oconee .....	291	702	26
Orangeburg .....	754	1,636	118
Pickens .....	275	795	33
Richland .....	1,501	1,413	109
Saluda .....	181	397	13
Spartanburg .....	1,032	2,147	79
Sumter .....	685	1,105	84
Union .....	357	703	25
Williamsburg .....	483	1,093	72
York .....	514	963	44
<b>Total.....</b>	<b>20,704</b>	<b>37,642</b>	<b>2362</b>
<b>Total Deaths .....</b>	<b>20,704</b>	<b>Rate.....</b>	<b>15.4</b>
<b>Total Births .....</b>	<b>37,642</b>	<b>Rate.....</b>	<b>28.1</b>
<b>Total Still Births .....</b>	<b>2,362</b>	<b>Rate.....</b>	<b>1.7</b>

**TOTAL NUMBER OF BIRTHS AND DEATHS FOR SOUTH CAROLINA  
FROM JANUARY 1, 1916, TO OCTOBER 31, 1916.**

Counties.	Deaths.	Births.	S. Births.
Abbeville .....	333	810	57
Aiken .....	377	801	44
Anderson .....	739	1,798	84
Bamberg .....	183	505	30
Barnwell .....	213	569	33
Beaufort .....	390	469	68
Berkeley .....	334	581	44
Calhoun .....	247	505	60
Charleston .....	1,803	1,759	251
Cherokee .....	264	743	37
Chester .....	367	652	41
Chesterfield .....	283	880	37
Clarendon .....	447	895	79
Colleton .....	339	644	52
Darlington .....	481	1,088	79
Dillon .....	234	512	34
Dorchester .....	208	411	29
Edgefield .....	219	624	30
Fairfield .....	242	645	27
Florence .....	619	1,450	100
Georgetown .....	325	395	46
Greenville .....	862	1,985	113
Greenwood .....	419	840	45
Hampton .....	221	507	31
Horry .....	326	1,038	54
Jasper .....	120	200	7
Kershaw .....	275	651	49
Lancaster .....	350	649	42
Laurens .....	438	1,012	55
Lee .....	317	749	52
Lexington .....	254	676	41
Marion .....	280	641	41
Marlboro .....	403	986	66
Newberry .....	347	777	39
Oconee .....	286	796	35
Orangeburg .....	750	1,745	150
Pickens .....	270	841	38
Richland .....	1,166	1,421	126
Saluda .....	152	389	16
Spartanburg .....	911	2,188	118
Sumter .....	605	1,193	103
Union .....	309	666	45
Williamsburg .....	417	1,092	84
York .....	544	1,123	58
Total.....	18,669	38,901	2,670
Total Deaths .....	18,669	Rate.....	13.9
Total Births .....	38,901	Rate.....	29.0
Total Still Births.....	2,670	Rate.....	2.0

**BIRTHS IN SOUTH CAROLINA ACCORDING TO RACE AND SEX FOR  
NINE MONTHS ENDING SEPTEMBER 30, 1916.**

**White.**

Male .....	8,327
Female .....	7,635
Total.....	15,962

**Black.**

Male .....	9,403
Female .....	8,838
Total.....	18,241
Unknown .....	143



**COMPARATIVE STATEMENT OF DEATHS, FOR FOLLOWING DISEASES,  
FROM JANUARY 1, TO OCTOBER 31, 1915, AND 1916.**

	1915.	Rate.	1916.	Rate for year per 100,000.
Tuberculosis Pulmonalis .....	1735	136.3	1377	111.4
Tuberculosis (other forms) .....	93	.....	115	.....
Pellagra .....	1305	97.4	553	41.2
Diphtheria .....	75	5.6	59	4.4
Scarlet Fever .....	7	.5	10	.7
Measles .....	4	.3	10	.7
Typhoid Fever .....	474	35.2	413	30.7
Smallpox .....	2	.15	2	.15
Cancer and Malignant Tumors.....	435	32.3	426	31.8
Malaria .....	.....	.....	233	17.4
Meningitis Cerebro S.....	49	3.6	20	1.9
Whooping Cough .....	193	14.4	123	9.2
Pneumonia .....	1182	88.2	960	71.5
Pneumonia Broncho .....	258	19.2	221	16.4
Pneumonia Hypostatic .....	18	1.3	12	8.9
Pleurisy .....	23	1.7	26	1.9
Diseases, Circulation .....	2104	157.2	1999	148.8
Diseases, Kidneys .....	1364	101.7	1287	96.0
Syphilis .....	101	7.5	53	3.9
Syphilis Congenital .....	.....	.....	53	3.9
Tetanus .....	25	1.8	21	1.6
Tetanus Neonatorum .....	.....	.....	11	.81
Dysentery .....	456	33.9	330	24.6
Dysentery Amoebic .....	7	.5	10	.7
Scurvy .....	1	.075	1	.075
Intestinal Diseases .....	1144	85.3	1037	77.4
Erysipilas .....	11	.81	11	.81
Homicide .....	91	6.6	172	12.7
Suicide .....	42	3.1	40	3.0
Railroad Accidents .....	44	3.3	55	4.1
General Accidents .....	416	31.0	232	17.3
Lightning .....	18	1.3	14	1.0
Legal Electrocutions .....	6	.44	2	.15
Paralysis, Infantile .....	.....	.....	21	1.6
<b>Total.....</b>	<b>11683</b>	<b>.....</b>	<b>9909</b>	<b>.....</b>

**DEATHS IN SOUTH CAROLINA, ACCORDING TO RACE AND AGE FOR  
TEN MONTHS ENDING OCTOBER 31, 1915, AND 1916.**

	White Male.		Black Male.	
Age.	1915.	1916.	1915.	1916.
Under 1 Year.....	854	838	1,476	1,602
1 to 5 " .....	497	440	707	711
5 to 10 " .....	83	83	226	151
10 to 20 " .....	166	135	440	371
20 to 30 " .....	244	200	667	576
30 to 40 " .....	254	223	590	508
40 to 50 " .....	296	237	472	430
50 to 60 " .....	391	327	445	458
60 to 70 " .....	486	455	488	411
70 to 80 " .....	407	347	373	337
Over 80 " .....	173	161	218	239
Unknown .....	...	13	106	73
<b>Total.....</b>	<b>3,851</b>	<b>3,459</b>	<b>6,208</b>	<b>5,867</b>

  

	White Female.		Black Female.	
Age.	1915.	1916.	1915.	1916.
Under 1 Year.....	690	631	1,346	1,229
1 to 5 Years .....	385	367	700	596
5 to 10 " .....	83	84	210	180
10 to 20 " .....	168	143	603	479
20 to 30 " .....	345	278	1,083	900
30 to 40 " .....	363	302	768	681
40 to 50 " .....	295	257	577	514
50 to 60 " .....	309	259	424	380
60 to 70 " .....	417	372	441	373
70 to 80 " .....	440	422	318	287
Over 80 " .....	279	264	244	246
Unknown .....	34	27	113	59
<b>Total.....</b>	<b>3,808</b>	<b>3,406</b>	<b>6,827</b>	<b>5,924</b>
<b>Indians .....</b>	<b>10</b>	<b>13</b>		

**DEATHS FROM THE FOLLOWING DISEASES FOR TEN MONTHS END-  
ING OCTOBER 30, 1916.**

	1915.	1916.
Diphtheria .....	75	59
Malaria .....	..	233
Measles .....	4	10
Meningitis Cerebro S. ....	49	20
Pellagra .....	1,305	553
Scarlet Fever .....	7	10
Smallpox .....	2	2
Tuberculosis Pulmonalis .....	1,735	1,377
Tuberculosis (other forms) .....	93	115
Typhoid Fever .....	474	413
Whooping Cough .....	193	123
<b>Total.....</b>	<b>3,937</b>	<b>2,915</b>

**COMPARATIVE STATEMENT OF DEATHS IN THE FOLLOWING CITIES  
FROM JANUARY 1, TO OCTOBER 31, 1915, AND 1916.**

Cities.	1915.	1916.
Abbeville .....	71	72
Aiken .....	65	51
Anderson .....	286	231
Bennettsville .....	68	52
Camden .....	71	72
Charleston .....	1,480	1,283
Cheraw .....	43	36
Chester .....	111	89
Clinton .....	62	46
Columbia .....	1,260	940
Darlington .....	74	61
Easley .....	46	48
Florence .....	192	167
Gaffney .....	88	77
Georgetown .....	126	110
Greenville .....	327	273
Greenwood .....	102	93
Laurens .....	74	74
Marion .....	40	57
Newberry .....	69	73
Orangeburg .....	96	87
Rock Hill .....	134	120
Spartanburg .....	276	263
Sumter .....	217	184
Union .....	99	85
<b>Total.....</b>	<b>5,477</b>	<b>4,644</b>

Decrease for 1916, 833.

Columbia, S. C., December 14, 1916.

*To the State Board of Health:*

Gentlemen: Since January 1, 1916, 61 patients—19 women and 32 men—have received treatment at the Sanatorium. Of these 51 were admitted during the current year, 2 of whom were incipient, 30 moderately advanced, and 19 far advanced. Of those discharged, 10 were improved, 17 not improved and 4 apparently arrested. There are now resident 31 patients, 20 of whom are improved, 4 apparently arrested and 7 not improved. The following complications have occurred: Laryngeal tuberculosis in five cases and one case each of intestinal tuberculosis, pleurisy with effusion, empyema, epilepsy, mumps and pregnancy. There has been one death.

The total admission of patients to date is 75.



A building for 16 women has been built and equipped, the first woman being admitted August 16, 1916. The beds were filled promptly. All beds in the men's building have been full since July.

Seventy-five or eighty acres have been enclosed with substantial wire fencing for pasturage.

I have collected \$4,662.95. Of this amount, \$78.00 have been refunded to patients; \$2,954.16 spent for supplies; \$1,484.69 delivered to Dr. Jas. A. Hayne, and there are now \$146.10 as "cash on hand."

Some urgent needs of the Sanatorium are a kitchen and dining room to accommodate not less than 125, two pavilions similar to the one built in 1916, a hospital and reception building, another well, cow barn and dairy, cold storage plant and sewerage system.

I am again under obligation to Dr. C. F. Williams, Superintendent of the State Hospital, for labor furnished in clearing land.

Respectfully submitted,

ERNEST COOPER,  
Superintendent.

## REPORT OF FIELD SECRETARY OF SOUTH CAROLINA SANATORIUM.

The first work done by me for the South Carolina Sanatorium:

June—Endorsement of the South Carolina Press Association, the members pledging themselves to put on tuberculosis campaign, August 1st to 8th.

July—Preparation for campaign: Address before the Press Association. Address before the County Superintendent of Education; hearty endorsement by same. Nine patients in male ward in June. Both wards full for last two months.

August—Tuberculosis Week in South Carolina. Entire management of the campaign; personal interviews and letters to all editors in State; campaign a success. As a result of this movement the woman's ward was rapidly filled. I have held myself responsible for seven of the beds (in pay ward) at the Sanatorium and in all instances have been able to secure funds for their upkeep; in four cases have secured appropriation for the entire year.

September—Correspondence with prominent tuberculosis workers in every county in the State.

October—Address to annual meeting of the Mayors' Association; hearty endorsement of the work.

November—Address before Boards of Charities and Corrections. Plan laid before the State Board of Health for the purpose of creating a demand for a greater institution. Plan endorsed by Board at meeting, November 18th, 1916. Since that time have been successfully putting that plan into operation.

Money obtained for all purposes in all lines of my work (mileage inclusive), \$90.00 since June.

I realize that there is no special fund for such work in this State, and I have in many instances put myself to great inconvenience in order to meet the demands of the work. I have expended \$20.00 of my own money, having been out of Columbia from four to five days every week since the last meeting of the Board. I will be on the road until June 15th, at which time I will discontinue my traveling and address county delegations at their meetings held during the General Assembly. I hereby ask that proper appropriation be made for traveling expenses from December 15th to January 15th. I could not hope to make the trips I do on such limited means were I not entertained during a great many of my visits by friends of the institution.

There are ten members of the Finance Committee, two to be appointed at the next session. I have had favorable interviews with six of these members. They are all in favor of a liberal support of the Sanatorium and believe that we will get the \$50,000 for which we are asking.

Every mail brings invitations to present the plan of State Board of Health.

Will leave tomorrow for Beaufort, Kingstree, Florence, Sumter and Bishopville.

As regards the \$50,000 appropriation, favorable comment is being made throughout the State and sentiment is strong for an extension of the work. Mr. Liles will take charge of bill in House, Senator Johnson will take charge in Senate. The Record and The State will take the matter up editorially at the proper time. This cause will not fail. I will not be asked to return the money to the counties and cities, who by their appropriations show sentiment of the State at large.

In compliance with the decision of the Attorney General, who holds that money may not be contributed until necessity arises, I would say that before the free wards are completed the necessity



will have arisen in each city where money is pledged, so we operate within the law.

#### BEDS RESERVED FOR FREE WARDS.

*Cities.*—Abbeville, Greenwood, Charleston, Columbia, Laurens, Darlington, Orangeburg.

*Mills.*—Pacific Mills, Columbia; Greenwood Mills, Greenwood; Grenfell Mills, Greenwood; Abbeville Mills, Abbeville.

As I have received no refusal from any city council to which I have appealed, I confidently expect to fill the four vacancies by the 20th of December.

A letter presenting this cause will be read to the Grand Lodge of Masons at the meeting in Charleston (in December) by Dr. Frank Harrison, from Abbeville.

The plan of the State Board of Health to be discussed at the meeting of the Order of Trainmen in January. Invitation by Mr. C. D. Brown, Treasurer, to speak to special committee at the annual meeting of the Knights of Pythias in Union, S. C., April, 1917.

Letters sent to mayors of all towns in South Carolina.

Impossible for counties to make definite decision about free beds until meeting of the General Assembly.

County Delegations Interviewed—Reports Favorable—Abbeville, Charleston, Colleton, Clarendon and Greenwood.

County Delegations to Be Interviewed Before the Meeting of the General Assembly—Anderson, Sumter, Spartanburg, Dillon, Newberry, Williamsburg and Lee.

Other counties not having a call meeting until January.

Legislators interviewed, or letters received from Senators Christensen, Padgett, Lee, Ketchin, Walker, Durant, Durst, Beatie, Johnson, Rogers, Epps and Sinkler; Representatives J. T. Liles, Jas. Hoyt, Dr. Neuffer, J. H. Moore, Jos. Fromberg, H. G. Senseney, Arthur A. Young (2), J. H. Lesesne, W. W. Johnson, M. H. Mellette, W. W. Smoak, R. T. Strom, Paul B. Ellis, Jones Fuller, W. R. Richie, D. D. Morse, W. R. Bradford, A. K. Sanders, W. L. McCutchen, J. B. Atkinson, J. Rawlinson and John W. Crews.

(MRS.) ANNIE I. REMBERT.

## REPORT OF HEALTH OFFICER, RICHLAND COUNTY,

OFFICE OF HEALTH OFFICER, RICHLAND COUNTY,

1211 Gervais St., Columbia, S. C.,

December 13, 1916.

*The Executive Committee, South Carolina State Board of Health,  
Columbia, S. C.*

Gentlemen: I have the honor to submit the following report as Richland County Health Officer for the year beginning December 11, 1915, and ending December 10, 1916:

### *I. Medical Examination of Rural School Children.*

1. Number of white pupils examined, 1,600.
2. Number of colored pupils inspected, 950.
3. Principal diseases and defects of white children:
  - a. Defective teeth, 60%.
  - b. Defective vision, 15%.
  - c. Enlarged and diseased tonsils, 18%.
  - d. Adenoids, 7%.
  - e. Hookworm disease. Examinations so far made, 1916 fall session, positive, 33%.
  - f. Miscellaneous diseases: Various cases of chicken pox, measles, diphtheria, scarlet fever, roseola, pink eye, itch, pediculosis, malaria, bronchitis, tonsillitis, St. Vitus dance, deformity, infantile paralysis, pellagra, suppurative ear disease, deafness, pulmonary tuberculosis, skin disease, feeble-mindedness.
  - g. Physically sound, 30%.
4. Records. The records made show the condition of each pupil's nutrition, blood, mentality, skin, glands, lungs, heart, eye, ear, nose, throat, teeth, vision, and hearing, with notation as to use of tooth brush, vaccination, hookworm examination, signs and symptoms of all other defects and diseases, and the treatment obtained following previous examinations.
5. Treatment received following examinations, about 40%. Without any public health nurse or sanitary inspectors to assist in the way of a follow-up system, this percentage of treatments obtained is unexpectedly high. Many of the teachers, but unfortunately by no means all, are actively interested in urging the parents to secure the needed treatment, while many of the parents procure the needed treatment promptly without any urging.



Many of these children have been treated at the Columbia Children's Clinic. The active co-operation of all the teachers is urged, and it is hoped, too, that the County Board of Education will see the importance of lending its aid to this work and to school sanitation in general. Teachers are already noting the bettered physical and mental condition of many of these pupils, whose defects have been remedied, and their more rapid and satisfactory progress in school work.

6. Vaccination against smallpox. Only the newly entering pupils and the few that "escaped" last year are requiring vaccination this session. These are being vaccinated on my visits to the schools. Only two parents have refused to have their children vaccinated.

7. Hookworm examinations. Beginning with the fall session, 1916, the pupils have been furnished with containers to bring in specimens for hookworm examination. The teachers have been urged to secure as many specimens as possible. A good many specimens have already been sent in, about one-third of which have been found positive for hookworm. Through the State Board of Health oil of chenopodium and printed instructions as to its administration are furnished free to all infected cases. It is expected that this work will result in a great deal of good.

*II. Number of visits to Schools, 84.*

*III. Lectures on Home and School Sanitation, 60. Estimated attendance, 6,400.*

*IV. Health Bulletin.*

For the better enlightenment of parents, teachers, and pupils in Richland County on the general subject of The Backward Child, with special reference to Defects and Care of the Eyes, Adenoids and Diseased Tonsils, and Defects and Care of the Teeth, I have prepared, with the valuable and kind assistance of Drs. Robert Moore, Theo. Quattlebaum, and P. D. Brooker, a special health bulletin on these subjects with numerous illustrations. This bulletin has been adopted by the State Board of Health and will soon be published for use in all the counties of the State.

*V. School Sanitation.*

As a result of school inspections there has been a general betterment of sanitary conditions at the schools. Water supplies have been improved. Use of individual drinking cups has been enforced. Arrangements for washing hands and faces are being

provided. Pupils' use of the tooth brush is largely on the increase. Better methods of sweeping are being introduced. Sanitary privies have been installed, various schools having been provided with regular sewage disposal outfits, a wonderful improvement over the disgraceful condition of previous years. Consolidation of schols in better buildings is gaining ground.

#### *VI. Other Sanitary Work.*

1. In respect to soil pollution from improper and careless disposal of human excreta the City of Columbia was for a long time the worst possible malefactor, inasmuch as it dumped all its night soil from its hundreds of filthy surface privies out on the unsuspecting county near by. This matter was taken up with the city authorities, and the city's night soil is now disposed of in a very satisfactory manner through a sewer especially constructed for this purpose.

2. Community work this year was confined principally to the outlying districts near Columbia, including Waverly, Kendall Town, Edgewood, Pinehurst, Liberty Hill, Melrose Heights, and the section south of Lower street. The houses in these districts, 600 or more, were visited and the families instructed especially concerning the breeding places of flies and mosquitoes, their abolishment, and the proper disposal of animal and human excreta. Many stables and pens and premises were cleaned up, and "sanitary wagons" are now run through all these districts weekly, most of the night soil being cleaned out, carried off and disposed of through the city's specially constructed sewer.

Experience has taught, however, that it is not enough simply to teach and preach hygiene, but that in some degree it must be forced. To improve sanitation in town and country and to aid in overcoming the problem of soil pollution, I would respectfully suggest and submit to your honorable body the following rules for your consideration, and, if approved, for promulgation in some proper form and wording under Act 419 of the South Carolina General Assembly:

#### PROHIBITION OF SOIL POLLUTION.

Rule 1. Every house or other place used as a human habitation in the State of South Carolina, every school or other institution, public or private, State, county, or municipal, every mill, factory, or other place of business, and every pleasure, recreation, health or construction camp, shall be provided with a sanitary closet or



privy where human excrement is so disposed of that the excrement cannot endanger a source of drinking water and cannot be accessible to flies and animals.

Rule 2. No person, firm or corporation shall maintain or permit on premises owned by him any arrangement for the disposal of human excrement which may endanger a source of drinking water or be accessible to flies or animals.

Rule 3. No person shall deposit any human excrement on the surface of the ground or in any place where it may be exposed to flies or animals.

3. The authorities of the various cotton mills and mill villages are continuing in their efforts to improve their sanitary conditions. The Palmetto Mill has installed a pail privy system in the mill village and is arranging for a septic tank sewage disposal system at the mill. The Capital City Mill has arranged for a septic tank plant for the mill and village. The Olympia and Granby Mills are extending their sewage systems.

4. The dairies in the county have made decided improvements in their sanitary conditions, particularly with reference to the care and disposal of manure and the installation of sanitary privies. The largest slaughter house in the county has rebuilt entirely and is conducting its business in a satisfactory and sanitary manner.

5. The town of Eau Claire organized a board of health this summer with the County Health Officer as president of the board. A complete health ordinance, as drawn up by the County Health Officer, was adopted by the board and ratified by the town council, copy of which is attached herewith. Each house has been inspected and sanitary index cards of each house have been made out. The State Health Officer has sent out this ordinance to various towns in the State as a "model" health ordinance. The Town of Arden is the only incorporated town in the county without a board of health. The mayor of Arden has been officially notified and has had ample time to comply with the law in this matter.

6. Sanitation at the State Fair Grounds was greatly improved during the recent annual fair. Daily inspections of the fair grounds were made, and the following recommendations of the County Health Officer were carried out: Proper policing of the grounds, proper disposal of garbage and slops, daily removal of stable manure, protection of foods, fruits, ice cream and drinks

from dust and flies, abolition of the former surface privies and their disgracefully filthy condition, and the provision of sanitary pit privies with urinals. The installation of septic tank outfits is expected next year.

7. Homes where there were cases of contagious and infectious diseases were visited and the families instructed as to the precautions needed for the prevention of the spread of these diseases, quarantine being established wherever needed. Several cases of tuberculosis received sanatorium treatment.

There has been no epidemic whatever of any disease in the county this year, and there were apparently fewer cases of typhoid fever.

Several schools were inspected for a few days on account of several pupils having contracted scarlet fever. There was no spread of the disease.

Eight cases of infantile paralysis were found in the county, three white and five colored. Only one case died, a negro child, and all the others apparently fully recovered within two weeks to three months. The cervical muscles were paralyzed in all these cases, along with varying groups of other muscles.

Failure or neglect of various physicians to report communicable diseases, as required by law, adds considerably to the task of locating such diseases. Householders are themselves beginning to report these cases, a token of a proper spirit and of a greater interest in public health.

VII. The county delegation of the last General Assembly failed to provide in the current year's county supply bill the full amount required by the enabling Act creating the office of Richland County Health Officer, leaving a deficiency of \$800. The present county delegation will be asked to appropriate an amount sufficient to cover this deficiency.

The addition of two sanitary inspectors for the county would very materially aid in the prosecution of the work of rural sanitation.

Respectfully submitted,

H. M. SMITH, M. D.,

Richland County Health Officer.



## REPORT OF HEALTH OFFICER, GREENVILLE COUNTY.

Greenville, S. C., December 13, 1916.

*Dr. Jas. A. Hayne, Secretary State Board of Health.*

Dear Sir: I herewith hand you my annual report as County Health Officer of Greenville County for the year 1916 up to December 1st, 1916:

By an act of the last Greenville delegation, the County Health Officer was placed under the direct supervision of the State Board of Health, the result being more and better results in health work in this county than could possibly have been accomplished under the old regime. The preservation of health should receive the hearty co-operation and support of each individual of the county, as health is the greatest asset of any and all people.

By this work being under the direction of the State Board of Health, we were enabled to secure the services of ten expert sanitarians from the United States Public Health Service. These men were with us for about nine months. A sanitary survey of the premises of every home, outside the city of Greenville, in the county, was made by these men and the County Health Officer. In this survey 11,000 homes were visited.

The heads of the family were instructed as to how they contracted typhoid fever, dysentery, hookworm and summer complaint of children, likewise how to prevent same, the premises being gone over with the head of the house and suggestions given as to the construction of a sanitary privy, improvements of water supply, screening of houses, etc. Beside the private homes, all schools, churches, stores and public places were visited and advice given for improvements for making these places sanitary.

A second visit was made to 2,000 homes that we might get an estimate of improvements in sanitation. We found that 20 per cent. had made improvements of water supply and screening, keeping privies in better sanitary condition. Ten per cent. had screened their houses, improved their water supply and built sanitary privies, this being about as sanitary as can be obtained in a country home. In this work, either alone or with the United States Public Service doctors, I visited 3,500 homes.

The result of this work gives us a very much smaller number of typhoid fever cases this year. In 1915 there were 240 cases reported; this year there have been 115 cases reported.

I attended and assisted in twenty lectures given by the United States Public Service doctors, made twenty-five visits, with Dr. Lumsden, to mill and municipal officials in securing sanitary improvements. Dr. Lumsden says that this county was the better prepared for this work than any county he has had a sanitary survey made of and that he has gotten his best results here.

I have examined 1,325 school children (this part of the work being somewhat handicapped by the extensive sanitary work being done). Of this number, 631 had decayed teeth, 212 exposed pulp, 100 prutrescent pulp, 21 had bad dental attention, 50 malposition of teeth, 12 malocclusion, 293 used their tooth brushes regularly, 235 were successfully vaccinated against smallpox, 185 had padiculosis, 30 eczema, 5 discharging ears, 10 sore eyes, 60 enlarged glands of the neck, 7 impetigo, 50 nasal obstruction, 37 defective eyesight, 122 acute colds, 10 deaf in both ears, 5 in one ear, 5 leaking hearts, 25 cervical glands enlarged, 5 ringworm, 100 enemic, 5 goiter, 635 enlarged tonsils, 100 sluggish mentally. Cards were sent parents advising medical attention for all those children who were enemic, those with ringworm, defective eyesight, deafness, eczema, sore eyes, nasal obstruction, 250 advising removal of tonsils, 200 dental attention.

I gave lectures at 23 schools and churches; estimated attendance, 2,835.

The following diseases were reported: Chicken pox, white 7, colored 0, total, 7; dysentery, white 2, colored 0, total 2; diphtheria, white 7, colored 0, total 7; infantile paralysis, white 7, colored 1, total 8; malaria (no blood examined), white 2, colored 2, total 4; mumps, white 1, colored 0, total 1; measles, white 199, colored 0, total 199 (90 cases no doctor attending); pneumonia, white 11, colored 0, total 11; pellagra, white 7, colored 1, total 8; scarlet fever, white 68, colored 0, total 68 (12 cases no doctor attending), tuberculosis, white 7, colored 1, total 8; whooping-cough, white 1, colored 0, total 1; typhoid fever, white 88, colored 28, total 116; smallpox, white 2, colored 14, total 16.

These cases were visited, quarantined and instructed how to prevent its spread in family and neighbors. Where the disease was typhoid and smallpox the well members of the family were advised to be vaccinated against the disease and were told that the health officer would vaccinate if their doctors would not. I have made inspection of mills, county poor house, jail and convict camps. If the people will carry out the suggestions given



them in the sanitary survey so recently made we can rid this county of about 90 per cent. of all cases of typhoid fever, dysentery, hookworm and summer complaint of children.

Respectfully submitted,

S. J. TAYLOR, M. D.,  
County Health Officer.

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## REPORT OF DIRECTOR OF COMMUNITY UNITS.

*To the Chairman and Members of the Executive Committee South Carolina State Board of Health:*

Gentlemen: I herewith submit my report as your Director of Community Units for the period beginning June 1st, 1916, and ending December 31st, 1916.

On account of the epidemic of infantile paralysis and the great volume of work incident thereto, it was necessary for me to render assistance in the office and also to investigate epidemics and make diagnosis in the field, in addition to supervising the work of community units.

### RURAL SANITATION.

With two thoroughly competent and experienced men in charge of the Units of Community Work it was not necessary for the Director to give as much time to this work as will be necessary during the year 1917. Doctors Howell and Routh will resign the last of December to take up other lines of public health work. To them is due the credit for the splendid success which this work has achieved in the past year. We have applications from two counties for full time work next year and the citizens of these counties will urge upon their delegations the necessity for the appropriation of funds for this work.

The field men report decrease of hookworm disease in the districts in which they have worked, and physicians report that these campaigns have taught the people the economic value and importance of the prevention of hookworm disease and its early diagnosis, and also the power of prevention of typhoid fever and other intestinal diseases by the construction and proper use of fly-proof sanitary privies and the proper disposal of night soil.

Especial mention should be made of the splendid work done by Dr. Routh in Colleton County and of Dr. Howell in Florence County.

A number of small towns were made sanitary through the efforts of these men and several cities owe the full time trained health officers which they are to employ next year to the efforts of these field men.

It will be absolutely essential for a man thoroughly experienced in rural sanitation work to give at least half of his time to the direction of this work next year if we hope to accomplish in 1917 as successful work as we have had in 1916. New men will have to acquire experience in the field work before they can get anything like the excellent results which have been accomplished by Drs. Howell and Routh and their assistants in the field.

#### EPIDEMIC WORK.

Thirty-three epidemics of contagious diseases were investigated during six months' work. These contagions were scarlet fever, measles, smallpox, diphtheria, malaria, typhoid fever and infantile paralysis. A number of these epidemic diseases occurred in the rural districts and were under the direct supervision of the State Board of Health. Cases occurred in widely separated fields and it was not possible to investigate all of them, as the dates sometimes conflicted, but these cases were very few.

Where possible, when contagion occurred in small towns, a mass meeting was called or meetings of the city council and local Board of Health and the importance of sanitation as a prophylaxis against the spread of the disease was brought to their attention. As a result of these meetings, in some instances, ordinances were drawn up by local boards and adopted by city councils requiring sanitary closets to be constructed at every home. Several mill villages agreed to put in adequate sewerage systems for their employees.

Hotels, markets, public water and milk supplies and sanitary conditions in general were investigated when time permitted. A number of hotels in the State were found to be far below the average and reflected discredit on the towns in which they were located, as well as being a menace to the health of the traveling public.

#### DEMONSTRATION WORK.

In addition to other work, an exhibit was prepared which would carry a message to those who saw it and it attracted a great deal of attention and received favorable comment from all who saw it.



This exhibit was demonstrated at the State Fair for both white and colored people, and also at the county fairs for both races.

As a number of county fairs conflicted in their dates, the exhibit could not be taken to all, but after it was shown at the State Fair we received thirteen applications from county fair associations for the use of it. This exhibit stressed the importance of sanitation and the crusade against typhoid fever and tuberculosis and was illustrated by objects which attracted the attention of people and allowed us to talk to them about the importance of disease prevention and to demonstrate to them how certain diseases could be prevented by proper sanitation and modes of living. Over 50,000 persons viewed the exhibit and at least 10,000 interested persons were talked to personally in regard to health problems. It has demonstrated the importance of this phase of educational health work and it is to be hoped that some arrangement may be made by which the exhibit can be enlarged and sufficient funds obtained by which it may be shown at every county fair next year and also at community fairs where people are reached who are often unable from financial reasons to attend the State Fair.

#### OFFICE WORK.

All time not utilized in other lines of work was spent in the office, either assisting the State Health Officer or attending to correspondence relating to my branch of work. As the clerk has so many other duties to perform I acted as my own stenographer and answered all letters and communications in regard to epidemic and rural sanitation work.

A concise report of all work done since June 1st is appended:

#### SUMMARY OF PERSONAL WORK DONE BY L. A. RISER, M. D., DIRECTOR OF COMMUNITY UNITS FOR SIX MONTHS, BEGINNING JUNE 1ST, 1916.

Thirty-four epidemics investigated.

Twenty-six lectures and addresses to 4,600 people.

Sixteen days demonstrating health exhibit at county fairs. Personal talks made to 10,000 persons. Exhibit seen by 50,000 persons.

Sixty-eight days of office work.

Ten days of rural sanitation work in the field.

Eleven hotels inspected.

Eleven meetings with local Boards of Health and city councils attended and plans discussed for better sanitation.

Thirteen mill presidents interviewed in the interest of better sanitary conditions in mill villages.

Sixteen public water supplies inspected and samples collected for bacteriological examination.

Two slaughter pens inspected.

Two County Medical Societies attended.

Two medical conventions attended.

Miscellaneous work.

June 3—New Brookland—Public lecture. Sanitary inspection.

June 4—Columbia—Office work.

June 5-7—Paxville—Investigation of typhoid. Public lecture. Hotel inspected.

June 8-14—Columbia—Office work.

June 15-16—Johnston—Investigation of smallpox. Hotel inspected.

June 17—Columbia—Office work.

June 18-19—Westminster—Chautauqua lecture. Hotel inspected.

June 20-22—Lane—Investigation of malaria. Hotel inspected.

June 23-24—Walhalla—Inspection of slaughter pen.

June 26—Lockhart—Inspection of water supply.

June 27-28—Columbia—Office work.

June 29-30—Sumter County—Inspection of rural sanitation work.

July 1-2—Gaffney—Investigation of typhoid. Address to City Council and Board of Health.

July 3-6—Columbia—Office work.

July 7-8—Easley—Public lecture. Hotel inspected.

July 10-12—Columbia—Office work.

July 13-17—Cross Hill—Chautauqua lecture.

Laurens County—Inspection of rural sanitation work.

July 18—Greenville and Greer—Investigation of infantile paralysis. Hotel inspected.

July 19—Gaffney—Investigation of typhoid. Hotel inspected.

July 20—Clifton and Cowpens—Investigation of infantile paralysis.

July 21-22—Whitmire—Investigation of typhoid. Public lecture.

July 24—Columbia—Office work.

July 25—Easley—Public lecture. Address to Tomato Club.

July 26—Westminster—Investigation of infantile paralysis.



- July 27—Seneca—Chautauqua lecture. Hotel inspected.
- July 28-29—Woodruff—Public lecture. Address to Boy Scouts. Lecture to negroes. Hotel inspected. Sewerage system inspected, also sanitary condition of mill villages investigated.
- July 30-31—Columbia—Office work.
- August 1-3—Columbia—Office work.
- August 4-5—Anderson—Investigation of infantile paralysis. Slaughter pen inspected. Hotel inspected. Address to City Council and Board of Health.
- August 6-7—Columbia—Office work.
- August 8—Wagener—Lecture to men. Hotel inspected.
- August 9—Seivern—Investigation of infantile paralysis.
- August 10—Swansea—Address to public. Investigation of infantile paralysis.
- August 11-19—Columbia—Office work.
- August 20-21—Isle of Palms—Attending convention of health officers. Lecture on rural sanitation.
- August 22-25—Dillon County—Work in rural sanitation.
- August 28—Belton—Sanitary inspection.
- August 29—Columbia—Office work.
- August 30—Camden—Investigation of scarlet fever.
- August 31—Easley—Investigation of scarlet fever.
- September 1—Piedmont—Investigation of infantile paralysis. Address to Board of Health and City Council.
- September 2—Pelzer—Investigation of infantile paralysis.
- September 3-4—Columbia—Office work.
- September 5—Union—Investigation of infantile paralysis.
- September 6—Easley—Investigation of scarlet fever. Address to Pickens County Medical Society.
- September 6—Liberty—Investigation of scarlet fever and infantile paralysis.
- September 7—Woodruff—Investigation of infantile paralysis.
- September 8-10—Columbia—Office work.
- September 11—Mayesville—Investigation of infantile paralysis.
- September 12—Winnsboro—Investigation of infantile paralysis.
- September 13—Newberry—Investigation of malaria.
- September 14—Columbia—Office work.
- September 15—Chapin—Investigation of infantile paralysis.
- September 16-22—Columbia—Office work.

- September 23—Sumter—Investigation of infantile paralysis.  
 September 24-26—Columbia—Office work.  
 September 27—Newberry—Investigation of malaria.  
 September 28—Anderson—Sanitary investigations. Address to Civic League.  
 September 29-30—Greenville—Making preparations for Health Day demonstration.  
 October 2—Ruby—Investigation of infantile paralysis.  
 October 3-4—Greenville—Attending health rally.  
 October 6-8—Columbia—Office work.  
 October 9-10—Darlington—Investigation of infantile paralysis.  
 October 11—Columbia—Office work.  
 October 12—Blackville—Chautauqua lecture.  
 October 13—Calhoun County—Investigation of scarlet fever.  
 October 14—Columbia—Office work.  
 October 16-17—Stations on Piedmont & Northern R. R. collecting specimens of water for bacterial examination.  
 October 18—Scranton—Investigation of scarlet fever.  
 October 19—Leesville—Investigation of scarlet fever.  
 October 20-21—Orangeburg County—Public lecture at Four Holes school house. Investigation of rural sanitation.  
 October 23-30—Columbia—Preparing State Fair exhibit and demonstrating exhibit on fair grounds.  
 November 1-2—Columbia—Office work.  
 November 3—New Brookland—Investigation of diphtheria.  
 November 4—Lexington County—Investigation of smallpox.  
 November 7-11—Batesburg—Demonstrating exhibit at Tri-County Fair. Public address.  
 November 13-18—Columbia—Office work.  
 November 20-25—Lancaster—Demonstrating exhibit at Lancaster County Fair.  
 November 27-30—Bishopville—Demonstrating exhibit at Lee County Fair.  
 December 1-2—Bishopville—Lee County Fair.  
 December 4—Columbia—Office work.  
 December 5-6—Conway—Investigation of scarlet fever.  
 December 7—Columbia—Office work.  
 December 8—Camden—Investigation of infantile paralysis.  
 December 9—Columbia—Office work.  
 December 10—Chapin—Investigation of suspected meningitis.  
 December 11—Blackville—Investigation of infantile paralysis.



December 12-16—Columbia—Office work.

December 18-31—New Orleans—Studying methods of malaria investigation and control at Marine hospital.

L. A. RISER, M. D.

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## REPORT OF CHEMIST AND BACTERIOLOGIST.

*To the Chairman and Members of the Executive Committee of the State Board of Health of South Carolina:*

Gentlemen: I have the honor to submit the following report of analysis of samples of water from the public water supplies of South Carolina, made under the direction of the State Board of Health, in accordance with the Laws of South Carolina relating to the Purity of the Water Supplies of Towns and Cities: 1 Code, Sec. 1599.

Samples of water from forty-four cities and towns maintaining public water supplies were received for chemical and bacterial analysis. The analyses indicated that the waters were of good quality and free from contamination. In a few cases the samples first submitted showed either chemical or bacterial indications of contamination. In each of these cases a further investigation was made, and the final examination indicated that the causes of the contamination had been removed, or that the contamination was accidental or temporary.

Eight samples of water were received from miscellaneous sources for analysis, of which two were found to be contaminated, and it was recommended that the use of these supplies be discontinued.

There has been a great change in the attitude of the management and superintendents of the various water supplies with regard to the value of these examinations, and a growing appreciation of the importance of periodic analysis, not only on account of the assurance to citizens of the purity of the supply, but on account of the assistance rendered in the management of the plant and control of sources of contamination. A number of supplies have requested more frequent examinations during the summer months. The importance of the examinations has been further emphasized by the federal law requiring all railroads to submit periodic analyses of the waters supplied to passengers on trains.

The following cities have noted improvements or additions to their plants during the past year: Columbia, doubling capacity

by addition of six new filter units and improvements of grounds; Greenwood, four new wells and one compressor; Newberry, one new well having capacity of 43,200 gallons per day; Lancaster, additional settling basin and six-inch mains all over city; Laurens, four new wells and contemplation of discontinuance of present source; Spartanburg, increased capacity of coagulation basin, two new filters and 3,000,000-gallon pump.

In order to make the information regarding supplies as complete as possible, I have obtained information as to sewage and garbage disposal, which is included in the following tabulated report of officials of local Boards of Health and plants, source, capacity, treatment, daily consumption and consumption per capita, discharge of sewage, disposition of garbage and analyses of samples of water.

Very respectfully,

FRANCIS L. PARKER, M. D.



## RESULTS IN PARTS PER MILLION.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Am- monia.	Nitrogen as Ni- trates.	Nitrogen as Ni- trates.	Total Solids.	Bacterial Indica- tions of Con- tamination.	Chemical Indica- tions of Con- tamination.
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## Water Supply of Abbeville, S. C.

Abbeville Water & Electric Plant. Owned by city. Superintendent, E. M. Anderson. In charge of collection of samples, E. M. Anderson. Chairman local Board of Health, Dr. C. H. McMurray.  
 Source: Creek, 1½ miles from city. Capacity, 250,000 gallons per day; filtered by mechanical filters. Treatment, ½ grain Alum per gallon. Capacity of plant, 500,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered.  
 Sewerage system, 50 per cent. of city sewered. Sewage empties into creek. No garbage disposal plant. Garbage dumped in old fields and gullies.

March 7, 1916.....	6.00	0.01	0.02	0.00	0.00	69.00	Negative	Negative
June 5, 1916.....	5.00	0.01	0.03	0.00	0.00	165.00	Negative	Negative
September 5, 1916.....	5.00	0.01	0.02	0.00	0.00	73.00	Negative	Negative
December 6, 1916.....	5.00	0.01	0.01	0.00	0.00	73.00	Negative	Negative

## Water Supply of Alken, S. C.

City Water Works. Superintendent, H. Sudlow. In charge of collection of samples, J. L. McCarter. Chairman local Board of Health, I. W. Fowler.  
 Source: Collection of springs, 6½ miles from city. Capacity, 2,000,000 gallons per day; not filtered. Capacity of plant, pumpage, 1,500,000 gallons per day. Average consumption, 350,000 gallons per day. Consumption per capita, 80 gallons per day. 75 per cent. metered.  
 Sewerage system, 75 per cent. of city sewered, sand filter beds. Sewage empties into small stream. No garbage disposal plant.

March 6, 1916.....	4.00	0.01	0.01	0.05	0.00	20.00	Negative	Negative
June 16, 1916.....	5.00	0.02	0.02	0.10	0.00	22.00	Negative	Negative
September 27, 1916.....	5.00	0.01	0.01	0.10	0.00	20.00	Negative	Negative

### Water Supply of Allendale, S. C.

Commission of Public Works. Owned by town. Superintendent, J. W. Mallard. In charge of collection of samples, J. W. Mallard. Chairman local Board of Health, J. E. Wainock.  
Source: Well, near center of town; not filtered. Capacity, 50,000 gallons per day. Capacity of plant, 50,000 gallons per day.  
Average consumption, 25,000 gallons per day. Consumption per capita, 42 gallons per day. Service metered.  
Sewerage system, 50 per cent. of city sewered. Septic tank and sprinkling filter. Sewage empties into Coosohatchie river.  
No garbage disposal plant. Garbage dumped in open fields  $1\frac{1}{2}$  miles from city and burned.

February 29, 1916.....	5.00	0.02	0.00	0.00	105.00	Negative
July 11, 1916.....	6.00	0.01	0.01	0.00	99.00	Negative
September 12, 1916.....	6.00	0.01	0.01	0.40	158.00	Negative
December 8, 1916.....	5.00	0.01	0.01	0.00	116.00	Negative

### Water Supply of Anderson, S. C.

Southern Public Utilities Company. Manager, H. A. Orr. In charge of collection of samples, R. T. Long. Chairman local Board of Health, Dr. Frank Ashmore.  
Source: Bailey's Creek, 2 miles from city. Capacity, 4,000,000 gallons per day. Filtered by mechanical filter. Treatment,  $\frac{1}{4}$  grain Alum per gallon. Capacity of plant, 1,300,000 gallons per day. Average consumption, 600,000 gallons per day.  
Consumption per capita, 100 gallons per day. Service metered.  
Sewerage system, 75 per cent. of city sewered. No sewage disposal plant. Sewage empties into Rack river and Jenistee creek. Garbage dumped at incinerator and burned.

March 8, 1916.....	4.00	0.01	0.00	0.00	139.00	Negative
June 6, 1916.....	4.00	0.01	0.02	0.00	136.00	Negative
September 1, 1916.....	4.00	0.01	0.03	0.00	68.00	Negative
December 2, 1916.....	4.00	0.01	0.01	0.00	52.00	Negative

### Water Supply of Barnwell, S. C.

Barnwell Light & Water Works. Owned by city. Superintendent, F. H. Miller. In charge of collection of samples, F. H. Miller. Chairman local Board of Health, Dr. J. G. Wooley.  
Source: Two wells in city,  $4\frac{1}{4}$  and 6 inches diameter, 151 feet deep. Capacity, 72,000 gallons per day. Not filtered.  
Capacity of plant, 72,000 gallons per day. Average consumption, 25,000 gallons per day. Consumption per capita, 30 gallons per day. Service 50 per cent. metered.  
No sewerage system. Garbage dumped outside of town.

March 8, 1916.....	7.00	0.01	0.00	0.00	121.00	Negative
April 16, 1916.....	7.00	0.02	0.00	0.00	119.00	Negative
August 21, 1916.....	7.00	0.01	0.02	0.00	100.00	Negative
December 6, 1916.....	5.00	0.01	0.01	0.00	98.00	Negative



## RESULTS IN PARTS PER MILLION (Continued).

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Am- monia.	Nitrogen as Ni- trates.	Nitrogen as Ni- trites.	Total Solids.	Bacterial Indica- tions of Con- tamination.	Chemical Indica- tions of Con- tamination.
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## Water Supply of Batesburg, S. C.

Batesburg Electric Light & Water Co. Owned by city. Superintendent, F. M. Boyd. In charge of collection of samples, S. B. Cartledge. Chairman local Board of Health, Dr. R. H. Zimmerman. Capacity of plant, 25,000 gallons per day. Average consumption, 5,000 gallons per day. Not filtered. Consumption per capita, 2 gallons per day. Service metered. Average consumption, 6,000 gallons per day. No garbage disposal plant. Garbage hauled outside of city and buried. No sewerage system.

## Water Supply of Beaufort, S. C.

Town of Beaufort, Water & Light Department. Superintendent Public Works, H. R. Pollitzer. In charge of collection of samples, H. R. Pollitzer. Chairman local Board of Health, Dr. C. M. Guffin. Capacity of plant, 50,000 gallons per day. Well, 12 inches in diameter, and 125 feet deep, in center of city. Not filtered. Average consumption, 50,000 gallons per day. Consumption per capita, 200 gallons per day. Service metered. Average consumption, 50,000 gallons per day. No sewerage system, 50 per cent. private sewers. Sewage empties into Salt Water river. No sewage disposal plant. No garbage disposal plant. Garbage dumped at edge of city limits and burned.

March 8, 1916.....	30.00	0.04	0.02	0.00	0.00	170.00	Negative	Negative
June 21, 1916.....	31.00	0.14	0.06	0.00	0.00	206.00	Negative	Negative
September 8, 1916.....	30.00	0.02	0.03	0.00	0.00	212.00	Negative	Negative
December 28, 1916.....	30.00	0.03	0.01	0.00	0.00	195.00	Negative	Negative

## Water Supply of Bennettsville, S. C.

Bennettsville Electric & Water Plant. Owned by city. Manager, E. C. Morrison. In charge of collection of samples, E. C. Morrison and J. M. Easterling. Chairman local Board of Health, \_\_\_\_\_ Capacity of plant, 500,000 gallons per day. 8 wells, 4½ inches diameter, 60 feet deep, pumped. Average consumption, 220,000 gallons per day. Capacity of plant, 500,000 gallons per day. Consumption per capita, 60 gallons per day. Service metered. Average consumption, 220,000 gallons per day. No sewerage system, 60 per cent. of city sewerage. Septic tank. Sewage empties into Crooked creek, 1½ miles from city. Garbage disposal plant.

March 6, 1916.....	14.00	0.01	0.02	0.02	0.00	46.00	Negative
June 6, 1916.....	18.00	0.02	0.02	0.30	0.00	64.00	Negative
September 20, 1916.....	14.00	0.01	0.02	0.50	0.00	39.00	Negative
December 4, 1916.....	14.00	0.01	0.01	0.20	0.00	75.00	Negative

#### Water Supply of Camden, S. C.

Municipal Water & Light Plant, Superintendent, E. D. McCutchan. In charge of collection of samples, Jno. W. Wilson and E. D. McCutchan. Chairman local Board of Health, G. W. Wilson.  
 Source: Spring-fed creek, 1 mile from city limits. Capacity, 7,200,000 gallons per day; filtered by mechanical filter. Treatment,  $1\frac{1}{2}$  grains Alum per gallon, 1.29 grains soda or lime per gallon. Capacity of plant, 575,000 gallons per day.  
 Service 50 per cent. metered.  
 Sewerage system, 80 per cent. of city sewerd. Sewage empties into Wateree river. No garbage disposal plant. Garbage is dumped on outskirts of town and burned.

March 11, 1916.....	5.00	0.01	0.02	0.00	0.00	72.00	Negative
June 13, 1916.....	6.00	0.01	0.03	0.00	0.00	78.00	Negative
September 9, 1916.....	4.00	0.02	0.03	0.00	0.001	45.00	Negative
December 8, 1916.....	4.00	0.01	0.01	0.00	0.00	65.00	Negative

#### Water Supply of Charleston, S. C.

Charleston Light & Water Co., Superintendent, J. M. Worthen. In charge of collection of samples, F. L. Parker. Chairman local Board of Health, J. A. Ball.  
 Source: Goose Creek, 12 miles from city. This is an impounded supply, the reservoir being an old tide water basin dammed off from tidal sea water. Area of flooded reservoir, 2,500 acres. Capacity of reservoir, 3,000,000,000 gallons, which would supply 10,000,000 gallons per day. Filtered by mechanical filter. Treatment,  $1\frac{1}{2}$  grains Alum per gallon and  $\frac{1}{4}$  grain Lime per gallon. Capacity of plant, 6,000,000 gallons per day. Average consumption, 5,000,000 to 6,000,000 gallons per day. Consumption per capita, 100 gallons per day. Service partially metered.  
 Sewerage system. Sewage empties into Charleston harbor. No garbage disposal plant. Garbage dumped in salt marshes outside of city limits.

March 10, 1916.....	17.00	0.02	0.09	0.00	0.00	105.00	Negative
June 5, 1916.....	21.00	0.02	0.10	0.00	0.00	100.00	Negative
September 2, 1916.....	16.00	0.01	0.10	0.00	0.00	97.00	Negative
December 12, 1916.....	35.00	0.00	0.015	0.00	0.00	130.00	Negative



## RESULTS IN PARTS PER MILLION (Continued).

Sample Drawn.

	Chlorine.	Free Ammonia.	Albuminoid Am- monia.	Nitrogen as Ni- trates.	Nitrogen as Ni- triles.	Total Solids.	Bacterial Indica- tions of Con- tamination.	Chemical Indica- tions of Con- tamination.
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**Water Supply of Chester, S. C.**

Chester Water Works, owned by city. Superintendent, James Hamilton. In charge of collection of samples, James Hamilton. Chairman local Board of Health, Dr. S. W. Prior.  
 Source: River 3 miles from city. Capacity, 7,200,000 gallons per day, filtered by mechanical filter. Treatment, 2 grains Alum per gallon. Capacity of plant, 720,000 gallons per day. Average consumption, 300,000 gallons per day. Consumption per capita, 60 gallons per day. Service metered.  
 Sewerage system, 75 per cent. of city sewered. No sewage disposal plant, sewage empties into Tan Yard branch. No garbage disposal plant. Garbage dumped in fields.

March 7, 1916.....	8.00	0.01	0.01	0.00	0.00	158.00	Negative	Negative
June 8, 1916.....	7.00	0.01	0.02	0.00	0.00	174.00	Negative	Negative
September 5, 1916.....	6.00	0.01	0.02	0.00	0.00	85.00	Negative	Negative
December 2, 1916.....	8.00	0.01	0.02	0.00	0.00	122.00	Negative	Negative

**Water Supply of Clinton, S. C.**

Municipal Water & Light Plant. Superintendent, B. B. Mills. In charge of collection of samples, B. B. Mills. Chairman local Board of Health, Dr. T. L. W. Bailey.  
 Source: 2 wells, 8 and 10 inches in diameter, in city. Capacity 180,000 gallons per day; not filtered. Average consumption, 75,000 gallons per day. Consumption per capita, 25 gallons per day. Service metered.  
 Sewerage system, 75 per cent. of city sewered. Septic tanks. Sewage empties into two streams. No garbage disposal plant. Garbage dumped outside of city limits.

March 27, 1916.....	9.00	0.01	0.05	0.00	0.00	187.00	Negative	Negative
June 7, 1916.....	9.00	0.03	0.03	0.05	0.00	234.00	Negative	Negative
September 6, 1916.....	8.00	0.01	0.02	0.10	0.00	180.00	Negative	Negative
December 14, 1916.....	7.00	0.01	0.01	0.25	0.00	180.00	Negative	Negative

### Water Supply of Columbia, S. C.

Water Department, City of Columbia, S. C. Owned by City. Superintendent, F. C. Wyse. In charge of collection of samples, G. H. White. Chairman local Board of Health, Dr. S. B. Fishburne. Capacity, practically unlimited. Filtered by mechanical filter. Capacity of plant, 13,000,000 gallons per day. Treatment, 1.5 grains Alum per gallon. Average consumption, 5,000,000 gallons per day. Consumption per capita, 150 gallons per day. Service metered. Sewerage system, 85 per cent. of city sewered. Sewage empties into Congaree river. No garbage disposal plant. Garbage is dumped in out of the way places of city and covered with earth.

March 6, 1916.....	5.00	0.01	0.01	0.00	0.00	69.00	Negative
June 8, 1916.....	4.00	0.04	0.02	0.05	0.00	126.00	Negative
September 1, 1916.....	4.00	0.01	0.01	0.00	0.005	70.00	Negative
December 4, 1916.....	5.00	0.01	0.01	0.00	0.00	45.00	Negative

### Water Supply of Darlington, S. C.

Carolina Gas & Electric Co. Superintendent, C. I. Romy. In charge of collection of samples, C. L. Romy. Chairman of local Board of Health, Dr. J. T. Coggeshall. Source: Well, diameter 8 inches, depth 385 feet, in city. Capacity, 288,000 gallons per day. Filtered by mechanical filter. Treatment, 0.4 grain Soda Ash per gallon, 0.2 grain Alum per gallon. Capacity of plant, 225,000 gallons per day. Average consumption, 125,000 gallons per day. Consumption per capita, 35 gallons per day. Service metered. Sewerage system, practically all of city sewered. Sewage empties into Swift creek. No garbage disposal plant. Garbage dumped out of town.

March 6, 1916.....	4.00	0.01	0.02	0.00	0.00	44.00	Negative
June 5, 1916.....	4.00	0.02	0.02	0.00	0.00	84.00	Negative
September 4, 1916.....	4.00	0.01	0.02	0.00	0.00	40.00	Negative
December 4, 1916.....	3.00	0.03	0.01	0.00	0.00	40.00	Negative

### Water Supply of Dillon, S. C.

Dillon Water Works Plant. Owned by city. Secretary and Treasurer, B. A. Bedenbaugh. In charge of collection of samples, E. W. Chapman. Chairman local Board of Health, Dr. J. A. Harter. Source: River about 2 miles from city. Capacity, 283,000 gallons per day. Filtered by mechanical filter. Treatment, Soda Ash and Alum. Capacity of plant, 130,000 gallons per day. Average consumption, 12,000 gallons per day. Consumption per capita, 30 gallons per day. Service metered. Sewerage system, 76 per cent. of city sewered. Septic tank. Sewage empties into Pee Dee river. No garbage disposal plant. Garbage dumped in low and suitable places.

March 14, 1916.....	7.00	0.01	0.03	0.00	0.00	80.00	Negative
June 3, 1916.....	7.00	0.01	0.04	0.00	0.001	71.00	Negative
September 14, 1916.....	7.00	0.02	0.04	0.00	0.00	80.00	Negative
December 12, 1916.....	7.00	0.01	0.01	0.00	0.00	90.00	Negative



## RESULTS IN PARTS PER MILLION (Continued).

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Am- monia.	Nitrogen as Ni- trates.	Nitrogen as Ni- trates.	Total Solids.	Bacterial Indica- tions of Con- tamination.	Chemical Indica- tions of Con- tamination.
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## Water Supply of Esasley, S. C.

City Water & Light Plant. Owned by city. Superintendent, C. D. Bolt. In charge of collection of samples, C. D. Bolt. Chair-  
man local Board of Health, T. B. Higgins.  
Source: Wells and branch. Wells, diameter 2 inches, depth 40 feet, pumped; distance from city three-quarters of a mile.  
Capacity, 150,000 gallons per day. Branch water filtered by mechanical filter. Treatment, Lime and Alum. Average  
consumption, 40,000 gallons per day. Consumption per capita, 15 gallons per day. Service metered.  
No sewerage system. No garbage disposal plant. Garbage dumped into large ditch.

March 14, 1916.....	3.00	0.01	0.01	0.00	0.00	53.00	Negative	Negative
June 12, 1916.....	5.00	0.01	0.02	0.10	0.00	40.00	Negative	Negative
September 12, 1916.....	4.00	0.01	0.02	0.05	0.00	46.00	Negative	Negative
December 12, 1916.....	3.00	0.01	0.01	0.00	0.00	50.00	Negative	Negative

## Water Supply of Florence, S. C.

City of Florence Water Department. Owned by city. Superintendent, M'Kean Marfitt. In charge of collection of samples,  
M'Kean Marfitt. Chairman local Board of Health, Dr. F. T. Covington.  
Source: Well, 12-10-8 inch casing, 6 inch discharge, 650 feet deep; pump air; in center of city, rear City Hall. Capacity,  
600,000 gallons per day; not filtered. Average consumption, 550,000 gallons per day. Consumption per capita, 91 gallons  
per day. Service metered.  
Sewerage system, 60 per cent. of city sewerred. Sewage disposal plant. Sewage empties into Jefferies creek. Garbage disposal  
plant, Nye Odorless Incinerator, 10 ton capacity, located on outskirts of city.

March 7, 1916.....	56.00	0.01	0.02	0.00	0.00	290.00	Negative	Negative
June 6, 1916.....	57.00	0.02	0.02	0.00	0.00	314.00	Negative	Negative
August 31, 1916.....	56.00	0.01	0.01	0.00	0.00	264.00	Negative	Negative
December 8, 1916.....	57.00	0.01	0.01	0.00	0.00	340.00	Negative	Negative

### Water Supply of Gaffney, S. C.

In charge of Board of Public Works. Owned by city. Superintendent, L. V. Gaffney. In charge of collection of samples, L. V. Gaffney. Chairman local Board of Health, G. G. Byers.  
Source: Creek,  $3\frac{1}{4}$  miles from city, filtered by gravity filter. Treatment, 1 grain Alum per gallon. Capacity of plant, 1,000,000 gallons per day. Average consumption, 100,000 gallons per day. Consumption per capita, 20 gallons per day. Service metered.  
Sewerage system, small per cent. of city sewered. Sewage empties into branch. No garbage disposal plant.

March 10, 1916.....	9.00	0.01	0.02	0.01	0.00	105.00	Negative
June 6, 1916.....	9.00	0.02	0.02	0.00	0.00	148.00	Negative
September 6, 1916.....	4.00	0.02	0.03	0.00	0.00	82.00	Negative
December 20, 1916.....	6.00	0.01	0.01	0.00	0.00	53.00	Negative

### Water Supply of Georgetown, S. C.

Black River Water Company. R. J. Clifford, President. In charge of collection of samples, Dr. H. L. Wright. Chairman local Board of Health, Dr. W. M. Gaillard.  
Source: Black river, 75 miles from city by river, 15 miles by air line. Capacity, 1,000,000 gallons per day; filtered by slow sand filter. No treatment. Capacity of plant, 1,000,000 gallons per day. Average consumption, 177,000 gallons per day. Consumption per capita, 75 gallons per day. Service metered.  
Sewerage system, 60 per cent. of city sewered. Sewage empties into Sandpitt river. No garbage disposal plant. Garbage dumped in low places in abandoned rice fields.

March 8, 1916.....	8.00	0.01	0.05	0.00	0.00	93.00	Negative
June 6, 1916.....	9.00	0.02	0.08	0.00	0.00	100.00	Negative
August 19, 1916.....	6.00	0.005	0.09	0.00	0.00	92.00	Negative
December 6, 1916.....	9.00	0.005	0.015	0.00	0.00	95.00	Negative

### Water Supply of Graniteville, S. C.

Graniteville Manufacturing Company. Superintendent, F. W. Gurry. In charge of collection of samples, S. F. Delvin.  
Source: Spring, 1 mile from town. Not filtered. Capacity, 40,000 gallons per day. Average consumption, 22,000 gallons per day. Consumption per capita, 20 gallons per day.  
Sewerage system, 10 per cent. of city sewered. Sewage empties into Horse creek. No garbage disposal plant. Garbage dumped outside of town limits.

March 8, 1916.....	4.00	0.01	0.02	0.00	0.00	45.00	Negative
June 7, 1916.....	4.00	0.02	0.02	0.00	0.00	48.00	Negative
September 6, 1916.....	5.00	0.01	0.01	0.00	0.00	100.00	Negative
December 5, 1916.....	4.00	0.015	0.02	0.00	0.00	25.00	Negative



## RESULTS IN PARTS PER MILLION (Continued).

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Am- monia.	Nitrogen as Ni- trates.	Nitrogen as Ni- trates.	Total Solids.	Bacterial Indica- tions of Con- tamination.	Chemical Indica- tions of Con- tamination.
<b>Water Supply of Greenwood, S. C.</b>								
Greenwood Water & Electric Plant. Owned by city. Superintendent, A. J. Sproles. In charge of collection of samples, A. J. Sproles, Chairman local Board of Health, Dr. W. P. Turner.								
Source: 8 wells, diameter 8 inches, 300 feet deep, 1½ miles from city. Capacity, 1,440,000 gallons per day; not filtered.								
Average consumption, 350,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered.								
Sewerage system, 50 per cent. of city sewered. Treatment, septic tank. Sewage empties from septic tank on to sand and gravel. No garbage disposal plant. Garbage dumped on vacant lot.								
March 6, 1916.....	4.00	0.01	0.02	0.00	0.00	184.00	Negative	Negative
June 6, 1916.....	7.00	0.01	0.01	0.00	0.00	240.00	Negative	Negative
September 9, 1916.....	7.00	0.01	0.03	0.00	0.01	220.00	Negative	Negative
December 6, 1916.....	7.00	0.01	0.02	0.00	0.00	215.00	Negative	Negative
<b>Water Supply of Greenville, S. C.</b>								
The Paris Mountain Water Company. Superintendent, H. W. Perry. In charge of collection of samples, H. W. Perry.								
Chairman local Board of Health, Dr. Davis Furman.								
Source: Streams in Paris Mountain to reservoirs, 8 and 12 miles from city; gravity system. Capacity, 5,000,000 gallons per day; not filtered. Average consumption, 1,200,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered.								
Sewerage system, 75 per cent. of city sewered. Sewage empties into Reedy river. Garbage disposal plant. Garbage dumped at crematory and burned.								
March 7, 1916.....	4.00	0.01	0.02	0.00	0.00	27.00	Negative	Negative
June 6, 1916.....	3.00	0.02	0.02	0.00	0.00	88.00	Negative	Negative
September 1, 1916.....	4.00	0.015	0.035	0.00	0.00	20.00	Negative	Negative
December 12, 1916.....	4.00	0.01	0.01	0.00	0.01	40.00	Negative	Negative

### Water Supply of Greer, S. C.

Commission of Public Works. Owned by city. Superintendent, C. C. McGowan. In charge of collection of samples, C. C. McGowan, Chairman local Board of Health, Dr. S. E. Holtzclaw.  
Source: 4 wells, in city. Capacity, 180,000 gallons per day; not filtered. Average consumption, 100,000 gallons per day. Service metered.  
Sewerage system, 25 per cent. of city sewerd. Sewage empties into branches. No garbage disposal plant. Garbage dumped in fields outside of city limits.

November 4, 1916.....	4.00	0.01	0.01	0.00	0.00	84.00	Negative	Negative
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### Water Supply of Hartsville S. C.

In charge of Commissioners of Public Works. Owned by city. Superintendent, J. A. Tyner. In charge of collection of samples, J. A. Tyner. Chairman local Board of Health, Maj. J. L. Coker.  
Source: Well,  $\frac{1}{2}$  mile from city, 3 $\frac{1}{2}$  inches diameter, 287 feet deep; pumped. Capacity, 237,600 gallons per day; not filtered. Garbage disposal plant, 237,600 gallons per day. Average consumption, 175,000 gallons per day. Consumption per capita, 60 gallons per day. Service metered.  
Sewerage system, 65 per cent. of city sewerd. Sewage empties into Black creek. Garbage disposal plant, garbage burned.

March 23, 1916.....	4.00	0.01	0.02	0.00	0.00	40.00	Negative	Negative
June 5, 1916.....	4.00	0.02	0.02	0.00	0.00	34.00	Negative	Negative
September 4, 1916.....	7.00	0.01	0.01	0.00	0.00	30.00	Negative	Negative
December 11, 1916.....	5.00	0.01	0.01	0.00	0.00	35.00	Negative	Negative

### Water Supply of Kingstree, S. C.

Kingstree Water Works. Owned by city. Superintendent, S. C. Anderson. In charge of collection of samples, S. C. Anderson. Chairman local Board of Health, T. McCutchen.  
Source: Well, 6 inches diameter, 520 feet deep; flows by gravity into city. Capacity, 720,000 gallons per day; not filtered. Average consumption, 60,000 gallons per day. Consumption per capita, 20 gallons per day. Service metered.  
Sewerage system, 80 per cent. of city sewerd. Sewage disposal plant, sewage treated with kerosene and salt. Sewage empties into Black river. No garbage disposal plant. Garbage dumped outside of city and burned.

March 27, 1916.....	7.00	0.01	0.03	0.00	0.00	251.00	Negative	Negative
June 14, 1916.....	7.00	0.02	0.03	0.10	0.00	287.00	Negative	Negative
September 29, 1916.....	6.00	0.01	0.02	0.00	0.00	253.00	Negative	Negative
December 11, 1916.....	6.00	0.01	0.02	0.00	0.00	275.00	Negative	Negative



# RESULTS IN PARTS PER MILLION (Continued).

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Am- monia.	Nitrogen as NI- trates.	Nitrogen as NI- trates.	Total Solids.	Bacterial Indica- tions of Con- tamination.	Chemical Indica- tions of Con- tamination.
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## Water Supply of Lancaster, S. C.

In charge of Commission of Public Works. Owned by city. Superintendent, R. S. Harper. In charge of collection of samples, E. C. Secret. Chairman local Board of Health, W. R. Thompson.  
Source: Two creeks, 1½ miles from city. Capacity, 1,000,000 gallons per day; filtered by mechanical filter. Treatment, 1 grain Alum per gallon. Capacity of plant, 720,000 gallons per day. Average consumption, 300,000 gallons per day.  
Consumption per capita, 20 gallons per day. Service metered.  
Sewerage system, 60 per cent. of city sewered. Sewage empties into Cane creek. No garbage disposal plant. Garbage emptied outside of city limits and treated with lime.

March 29, 1916.....	12.00	0.01	0.02	0.00	0.00	105.00	Negative	Negative
June 20, 1916.....	12.00	0.01	0.02	0.00	0.00	134.00	Negative	Negative
September 2, 1916.....	10.00	0.02	0.03	0.00	0.00	98.00	Negative	Negative
December 4, 1916.....	10.00	0.01	0.02	0.00	0.00	133.00	Negative	Negative

## Water Supply of Laurens, S. C.

Municipal Light & Water Plant. Superintendent, T. C. Johnson. In charge of collection of samples, T. C. Johnson. Chairman local Board of Health, Dr. R. E. Hughes.  
Source: Creek within city limits, filtered by mechanical filter. Treatment, 1 grain Alum per gallon. Capacity of plant, 250,000 gallons per day. Average consumption, 250,000 gallons per day. Consumption per capita, 25 gallons per day.  
Service metered.  
Sewerage system, covers practically entire town. Sewage empties into Little river. No garbage disposal plant. Garbage dumped outside of city limits and treated with lime when necessary.

March 15, 1916.....	6.00	0.01	0.01	0.20	0.00	67.00	Negative	Negative
June 25, 1916.....	6.00	0.02	0.02	0.10	0.00	88.00	Negative	Negative
September 1, 1916.....	6.00	0.01	0.02	0.00	0.00	60.00	Negative	Negative
December 16, 1916.....	6.00	0.01	0.01	0.00	0.00	78.00	Negative	Negative

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### Water Supply of Manning, S. C.

Manning Water Works. Owned by city. Superintendent, F. P. Ervin. In charge of collection of samples, F. P. Ervin. Source: Well, 6 inches diameter and 458 feet deep. Capacity, 86,400 gallons per day. Not filtered. Capacity of plant, 432,000 gallons per day. Average consumption, 20,000 gallons per day. Service metered. Black river swamp. No garbage disposal plant. Sewerage system, 75 per cent. of city sewered, 10 per cent. connections. Sewage empties into Black river swamp. No garbage disposal plant.

March 6, 1916.....	6.00	0.01	0.03	0.00	0.00	161.00	Negative
June 3, 1916.....	8.00	0.01	0.02	0.10	0.00	180.00	Negative
September 7, 1916.....	6.00	0.05	0.01	0.00	0.005	185.00	Negative
December 11, 1916.....	6.00	0.01	0.01	0.00	0.00	165.00	Negative

### Water Supply of McColl, S. C.

City of McColl Water Works. Superintendent, J. H. Dougherty. In charge of collection of samples, L. M. Morrison. Chairman local Board of Health, Dr. D. Hamer. Source: 2 wells, 6 inches diameter and 100 feet deep, pumped, within city. Capacity, 144,000 gallons per day; not filtered. Capacity of plant, 144,000 gallons per day. Average consumption, 40,000 gallons per day. Consumption per capita, 23 gallons per day. Service metered. Sewerage system, entire city sewered. Sewage empties into Planter creek. Sewage disposal plant. No garbage disposal plant. Garbage dumped outside of city.

March 8, 1916.....	6.00	0.01	0.02	0.00	0.00	53.00	Negative
June 5, 1916.....	8.00	0.02	0.02	0.00	0.00	54.00	Negative
September 1, 1916.....	5.00	0.02	0.02	0.10	0.00	17.00	Negative
December 8, 1916.....	4.00	0.01	0.01	0.00	0.00	50.00	Negative

### Water Supply of Marion, S. C.

Carolina Central Electric Co. General Superintendent, F. G. Godfrey, Florence, S. C. In charge of collection of samples, C. L. Roundy, local superintendent. Chairman local Board of Health, Dr. E. M. Dibble. Source: Wells, diameter 8 and 6 inches, depth 100 and 150 feet. In city, Capacity, 150,000 gallons per day; not filtered. Capacity of plant, 150,000 gallons per day. Average consumption, 75,000 gallons per day. Consumption per capita, 15 gallons per day. Service metered. Sewerage system, 75 per cent. of city sewered. Septic tank. Sewage empties into Catfish creek. Garbage dumped on "Dump Grounds" outside of city and set on fire. No garbage disposal plant.

March 7, 1916.....	7.00	0.01	0.01	0.00	0.30	188.00	Negative
June 8, 1916.....	6.00	0.02	0.02	0.00	0.00	190.00	Negative
September 2, 1916.....	8.00	0.03	0.03	0.00	0.001	173.00	Negative
December 5, 1916.....	6.00	0.01	0.01	0.00	0.005	165.00	Negative



## RESULTS IN PARTS PER MILLION (Continued).

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Am- monia.	Nitrogen as NI- trates.	Nitrogen as NI- trates.	Total Solids.	Bacterial Indica- tions of Con- tamination.	Chemical Indica- tions of Con- tamination.
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## Water Supply of Newberry, S. C.

In charge of Commissioners of Public Works. Owned by city. Superintendent, H. W. Schumpert. In charge of collection of samples, Dr. F. D. Mower. Chairman local Board of Health, Dr. F. D. Mower. Capacity, 300,000 gallons per day; Source: Wells, 2 and 8 inches in diameter, 300 and 325 feet deep, pumped by air, in city. Consumption per capita, 23½ gallons per day. Service 73 per cent. metered. Average consumption, 140,000 gallons per day. Sewage disposal plant, septic tank and filter. Sewage empties into Scotts creek. Sewerage system, city partly sewerred. Garbage dumped in country fields; an incinerator is being installed for disposal of the garbage.

March 6, 1916.....	29.00	0.01	0.01	0.20	0.00	308.00	Negative	Negative
June 5, 1916.....	30.00	0.01	0.01	0.40	0.00	354.00	Negative	Negative
September 1, 1916.....	31.00	0.01	0.01	0.15	0.00	311.00	Negative	Negative
December 9, 1916.....	28.00	0.01	0.01	0.05	0.00	355.00	Negative	Negative

## Water Supply of North Augusta, S. C.

North Augusta Works. Owned by corporation. Superintendent, W. W. Moore. In charge of collection of samples, W. E. Mealing. Superintendent local Board of Health, W. E. Mealing. Capacity, 400,000 gallons per day. Source: Lake in city. Not filtered. Treatment, 150 pounds Hypochlorite of Lime to 1,500,000 gallons. Capacity, 400,000 gallons per day. Service 100 per cent. metered. Average consumption, 280,000 gallons per day. Sewerage system, 20 per cent. of city sewerred. Sewage empties into Savannah river. No garbage disposal plant. Garbage dumped outside of town.

March 13, 1916.....	6.00	0.01	0.03	0.20	0.00	27.00	Negative	Negative
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### Water Supply of Orangeburg, S. C.

Orangeburg Water & Light Plant. Owned by city. Superintendent, J. E. Salley. In charge of collection of samples, J. E. Salley. Chairman local Board of Health, Dr. C. I. Green. Source: Wells, 5 and 8 inches diameter, 200 feet deep, pumped and flowing, in city. Capacity, 1,000,000 gallons per day; not filtered. Capacity of plant, 700,000 gallons per day. Average consumption, 230,000 gallons per day. Consumption per capita, 33 gallons per day. Service 60 per cent. metered. Sewerage system, 50 per cent. of city sewered. Sewage empties into Edisto river. Garbage dumped at incinerator and burned.

March 21, 1916.....	7.00	0.01	0.03	0.00	0.00	70.00	Negative
June 20, 1916.....	8.00	0.01	0.02	0.00	0.00	187.00	Negative
September 15, 1916.....	8.00	0.02	0.02	0.00	0.00	156.00	Negative
December 28, 1916.....	7.00	0.01	0.01	0.00	0.00	175.00	Negative

### Water Supply of Rock Hill, S. C.

Water & Electric Department, City of Rock Hill. Manager, J. G. Earnwell. In charge of collection of samples, S. T. Frew. Chairman local Board of Health, Dr. J. R. Miller. Source: Catawba river, 6 miles from city, filtered by mechanical filter. Treatment,  $\frac{1}{2}$  grain Alum per gallon,  $\frac{1}{2}$  grain Lime per gallon, 0.05 grain Hypochlorite of Lime per gallon. Capacity of plant, 1,000,000 gallons per day. Average consumption, 275,000 gallons per day. Consumption per capita, 37 gallons per day. Service metered. Sewerage system, city partly sewered. Sewage empties into Catawba river. Sewage disposal plant. Imhoff disposal plant. Garbage dumped on city farm.

March 7, 1916.....	6.00	0.01	0.02	0.00	0.00	48.00	Negative
June 6, 1916.....	5.00	0.02	0.02	0.10	0.00	54.00	Negative
September 5, 1916.....	6.00	0.01	0.01	0.00	0.00	42.00	Negative
December 5, 1916.....	4.00	0.015	0.02	0.00	0.00	50.00	Negative

### Water Supply of Spartanburg, S. C.

Spartanburg Water Works. Owned by city. Superintendent, M. M. Boyd. In charge of collection of samples, J. O. Erwin, Jr. Chairman local Board of Health, Dr. J. W. Allen. Source: Chiquopen creek and Sholly creek,  $\frac{1}{2}$  mile and 2 miles from city. Capacity, 5,000,000 gallons per day; filtered by mechanical filters. Treatment, 0.6 grain Alum per gallon. Average consumption, 1,250,000 gallons per day. Consumption per capita, 60 gallons per day. Service 50 per cent. metered. Sewerage system, 60 per cent. of city sewered. Sewage empties into Lawson's Fork creek and Fair Forest creek,  $\frac{1}{2}$  mile from city limits. Garbage disposal plant, garbage burned. Garbage dumped on outskirts of city.

March 6, 1916.....	4.00	0.01	0.02	0.00	0.00	28.00	Negative
June 8, 1916.....	3.00	0.01	0.02	0.00	0.00	88.00	Negative
September 25, 1916.....	5.00	0.02	0.03	0.00	0.00	30.00	Negative
December 14, 1916.....	3.00	0.01	0.01	0.00	0.00	30.00	Negative



RESULTS IN PARTS PER MILLION (Continued).

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrates.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
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Water Supply of Sumter, S. C.

City Water Works. Owned by city. Superintendent, W. W. McKagan. In charge of collection of samples, W. W. McKagan. Chairman local Board of Health, J. A. McKnight. Source: 15 wells, 6 inches diameter, 50 to 430 feet deep, pumped; 1 mile from city. Capacity, 1,800,000 gallons per day; not filtered. Capacity of plant electric, 720,000 gallons per day; steam, 1,080,000 gallons per day. Average consumption, 400,000 gallons per day. Consumption per capita, 35 gallons per day. Service, 80 per cent metered. Septic tanks. No sewerage system, 60 per cent of city sewered. Sewage empties into Turkey creek and Green swamp. Septic tanks. No garbage disposal plant. Garbage dumped on lot outside of city limits.

March 9, 1916.....	9.00	0.02	0.03	0.30	0.00	60.00	Negative	Negative
June 24, 1916.....	9.00	0.03	0.02	0.50	0.001	72.00	Negative	Negative
September 30, 1916.....	7.00	0.03	0.02	0.25	0.01	28.00	Negative	Negative
December 18, 1916.....	10.00	0.015	0.02	0.20	0.30	40.00	Negative	Negative

Water Supply of Timmons ville, S. C.

Board of Public Works. Superintendent, E. J. Lynch. In charge of collection of samples, E. J. Lynch. Chairman local Board of Health, Dr. C. A. Foster. Source: Well 8 inches diameter, 526 feet deep, on outer edge of town. Capacity, 300,000 gallons per day; not filtered. Capacity of plant, 150,000 gallons per day. Average consumption, 20,000 gallons per day. Consumption per capita, 20 gallons per day. Service metered. Septic tank. Sewage empties into Sparrow swamp. No garbage disposal plant. Garbage burnt and dumped into swamp.

March 7, 1916.....	6.00	0.01	0.01	0.00	0.00	112.00	Negative	Negative
June 5, 1916.....	5.00	0.02	0.02	0.00	0.00	100.00	Negative	Negative
September 4, 1916.....	6.00	0.01	0.02	0.00	0.00	63.00	Negative	Negative
December 7, 1916.....	4.00	0.01	0.03	0.00	0.00	85.00	Negative	Negative

### Water Supply of Union, S. C.

Municipal Electric Light & Water Works. Owned by town. Superintendent, R. A. Easterling. Chairman local Board of Health, S. G. Sarraff. In charge of collection of samples, R. A. Easterling. Capacity, 15,000,000 gallons per day. Filtered by mechanical filter. Treatment, Alum. Source: Creek, 2 miles from city. Consumption per capita, 40,000 gallons per day. Average consumption, 400,000 gallons per day. Consumption per capita, 35 gallons per day. Service metered. Sewage empties into Buffalo creek. No garbage disposal plant. Garbage disposal system, 75 per cent. of city sewered. Sewage empties into Buffalo creek. No garbage disposal plant. Garbage dumped outside of city limits.

March 27, 1916.....	5.00	0.02	0.01	0.00	0.00	30.00	Negative
June 8, 1916.....	4.00	0.01	0.02	0.01	0.00	30.00	Negative
September 6, 1916.....	6.00	0.01	0.05	0.00	0.00	57.00	Negative
December 6, 1916.....	5.00	0.01	0.03	0.00	0.00	75.00	Negative

### Water Supply of Winnsboro, S. C.

Board of Public Works. Owned by town. Superintendent, T. R. Ellison. In charge of collection of samples, T. R. Ellison. Chairman local Board of Health, Dr. J. E. Douglas. Capacity, 1,000,000 gallons per day. Treatment, Alum. Average consumption, 75,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered. Sewage system, 85 per cent. of city sewered. Sewage empties into Catharts branch,  $\frac{1}{2}$  mile from city. Septic tank. No garbage disposal plant. Garbage dumped in low waste places.

July 6, 1916.....	8.00	0.01	0.01	0.00	0.00	88.00	Negative
September 6, 1916.....	9.00	0.02	0.04	0.00	0.00	90.00	Negative
January 2, 1917.....	7.00	0.01	0.01	0.00	0.00	103.00	Negative

### Water Supply of Yorkville, S. C.

Yorkville Water Plant. Owned by city. Superintendent, J. O. Wray. In charge of collection of samples, J. O. Wray. Chairman local Board of Health, Dr. J. N. Walker. Capacity, 800,000 gallons per day; filtered by mechanical filter. Treatment,  $\frac{1}{2}$  grain Alum per gallon. Branch,  $\frac{1}{2}$  mile from city. Capacity, 300,000 gallons per day. Average consumption, 180,000 gallons per day. Consumption per capita, 35 gallons per day. Service metered. Sewage empties into Fishing creek on east and Turkey creek on west. No garbage disposal system, city partly sewered. Sewage empties into city limits and dumped on worn out land. Garbage hauled outside of city limits and dumped on worn out land.

March 7, 1916.....	7.00	0.02	0.02	0.00	0.00	103.00	Negative
June 8, 1916.....	5.00	0.01	0.02	0.01	0.00	100.00	Negative
September 8, 1916.....	7.00	0.01	0.01	0.00	0.00	85.00	Negative
December 8, 1916.....	5.00	0.01	0.01	0.00	0.00	65.00	Negative



## FINANCIAL STATEMENT.

The following is a correct statement of the expenditures of the State Board of Health for the fiscal year 1916, showing to whom paid and for what purpose. All claims against the Board are itemized and rendered in duplicate, the original being attached to warrant of Comptroller General and forwarded to his office for payment—the duplicate being filed in this office.

### EXPENDITURES. CONTINGENT.

1916	Voucher No.		
Feb. 29.	1.	To Miss Nelle Davis, stenographer, salary.....	\$100 00
Mar. 1.	2.	To Jas. A. Hayne, M. D., Secretary, incidental expenses.....	97 06
Mar. 1.	3.	To F. A. Coward, M. D., Director of Laboratory, expenses to County Medical Society meetings.....	7 40
Mar. 1.	4.	To The Palmetto National Bank, rent of offices.....	120 00
Mar. 1.	5.	To G. M. Carpenter, office supplies.....	13 55
Mar. 1.	6.	To Palmetto Ice Co., ice tickets.....	14 00
Mar. 1.	7.	To Central Drug Co., laboratory supplies.....	13 25
Mar. 1.	8.	To Lorick & Lowrance, materials for repairs at laboratory.....	11 64
Mar. 1.	9.	To Perry-Mann Electric Co., wiring for and connecting motor with rheostat.....	5 30
Mar. 1.	10.	To H. J. Bassler Co., repairing sterilizer.....	5 65
Mar. 1.	11.	To The State Co., pencil pointer.....	1 50
Mar. 1.	12.	To The Waverley Drug Co., rubber gloves.....	2 25
Mar. 1.	13.	To W. D. Starling, sheep.....	9 80
Mar. 1.	14.	To Columbia Lumber & Mfg. Co., lumber.....	12 30
Mar. 1.	15.	To Southern Bell Telephone & Telegraph Co., phone service.....	31 35
Mar. 1.	16.	To Columbia Ry., Gas & Electric Co., gas consumed.....	31 20
Mar. 1.	17.	To Western Union Telegraph Co., official telegrams.....	9 95
Mar. 1.	18.	To J. L. Minnaugh & Co., towels to be used at office and laboratory.....	5 40
Mar. 1.	19.	To Chas. A. Speissegger, Jr., M. D., Charleston, S. C., special agent in the suppression of smallpox.....	10 00
Mar. 1.	20.	To E. H. Sparkman, M. D., Charleston, S. C., special agent in the suppression of smallpox.....	15 00
Mar. 1.	21.	To J. L. Donnon, M. D., Ware Shoals, S. C., special agent in the suppression of smallpox.....	55 00
Mar. 1.	22.	To W. C. Abel, M. D., Columbia, S. C., special agent in the suppression of smallpox.....	10 00
Mar. 1.	23.	To L. M. Daniels, M. D., Columbia, S. C., special agent in the suppression of smallpox.....	10 00
Mar. 1.	24.	To W. R. Hartin, making pan for use at laboratory.....	3 50
Mar. 1.	25.	To Habenicht-McDougall Co., stereopticon.....	10 00
Mar. 6.	26.	To Educational Exhibition Co., Providence, R. I., exhibit on tuberculosis and typhoid fever.....	13 50
Mar. 6.	27.	To H. M. Alexander & Co., Marietta, Pa., diphtheria antitoxin.....	818 75
Mar. 6.	28.	To H. M. Smith, M. D., Columbia, S. C., special agent in the suppression of scarlet fever.....	5 00
Mar. 10.	29.	To J. C. Waring, M. D., McClellanville, S. C., special agent in the suppression of smallpox.....	50 00
Mar. 10.	30.	To Capital City Steam Laundry & Dye Works, towel service.....	2 00
Mar. 18.	31.	To S. D. Doar, M. D., McClellanville, S. C., special agent in the suppression of smallpox.....	50 00
Mar. 20.	32.	To Ticket Agent, Southern Railway Co., mileage book for Dr. F. A. Coward, Director of Laboratory.....	20 00
Mar. 31.	33.	To Miss Nelle Davis, Stenographer, salary.....	50 00
Mar. 31.	34.	To F. A. Coward, M. D., Director of Laboratory, traveling expenses...	9 50
Mar. 31.	35.	To Southern States Supply Co., closet combination at laboratory...	45 00
Mar. 31.	36.	To T. R. Howle, M. D., Andrews, S. C., special agent in the suppression of smallpox.....	25 00
Mar. 31.	37.	To W. G. Blackwell, M. D., Parkville, S. C., special agent in the suppression of smallpox.....	15 00
Mar. 31.	38.	To Jas. A. Hayne, M. D., Secretary, incidental expenses.....	49 81
Mar. 31.	39.	To G. M. Carpenter, office supplies.....	2 30
Apr. 3.	40.	To Southern Bell Telephone & Telegraph Co., phone service.....	25 60

Voucher		No.		
1916				
Apr. 3.	41.	To Columbia Ry., Gas & Electric Co., gas consumed.....	12 72	
Apr. 3.	42.	To The Palmetto National Bank, rent of offices.....	40 00	
Apr. 3.	43.	To National Vaccine & Antitoxin Institute, Washington, D. C., vaccine virus.....	227 96	
Apr. 3.	44.	To H. M. Alexander & Co., Marietta, Pa., vaccine virus.....	121 29	
Apr. 3.	45.	To Arthur H. Thomas Co., Philadelphia, Pa., laboratory supplies....	329 65	
Apr. 3.	46.	To C. O. Brown & Bro., glass.....	4 20	
Apr. 3.	47.	To Central Drug Co., laboratory supplies.....	32 85	
Apr. 3.	48.	To Western Union Telegraph Co., official telegrams.....	3 63	
Apr. 10.	49.	To Schieffelin & Co., New York, N. Y., vaccine virus.....	143 97	
Apr. 10.	50.	To West Disinfecting Co., Atlanta, Ga., drinking cups, sweeping compound, soap, etc.....	29 75	
Apr. 10.	51.	To The Murray Drug Co., laboratory supplies.....	3 25	
Apr. 10.	52.	To H. M. Alexander & Co., Marietta, Pa., diphtheria antitoxin.....	330 15	
Apr. 10.	53.	To Lorick & Lowrance, supplies in repairing laboratory.....	14 57	
Apr. 10.	54.	To Columbia Lumber & Mfg. Co., lumber.....	4 32	
Apr. 10.	55.	To H. M. Smith, M. D., Columbia, S. C., inspection of sanitary conditions in and around Lexington.....	5 00	
Apr. 29.	56.	To Jas. A. Hayne, M. D., Secretary, incidental expenses.....	66 04	
Apr. 29.	57.	To Miss Nelle Davis, Stenographer, salary.....	50 00	
Apr. 29.	58.	To F. A. Coward, M. D., Directory of Laboratory, expenses to Medical Association.....	25 25	
Apr. 29.	59.	To Pierre M. Foltz, Washington, D. C., lantern slides.....	11 55	
Apr. 29.	60.	To Southern Aseptic Laboratories, absorbent cotton.....	1 76	
Apr. 29.	61.	To Steele Glass Co., Philadelphia, Pa., ampuls.....	11 25	
Apr. 29.	62.	To Central Drug Co., laboratory supplies.....	16 60	
Apr. 29.	63.	To J. L. Donnon, M. D., Ware Shoals, S. C., special agent in the suppression of smallpox.....	10 00	
Apr. 29.	64.	To The R. L. Bryan Co., books.....	1 50	
Apr. 29.	65.	To Columbia Ry., Gas & Electric Co., gas consumed.....	13 20	
Apr. 29.	66.	To Columbia Paper Co., paper and twine.....	4 47	
May 1.	67.	To Southern Bell Telephone & Telegraph Co., phone service.....	22 26	
May 1.	68.	To Western Union Telegraph Co., official telegrams.....	1 55	
May 1.	69.	To The Palmetto National Bank, rent of offices.....	40 00	
May 1.	70.	To H. M. Alexander & Co., Marietta, Pa., diphtheria antitoxin.....	253 15	
May 12.	71.	To E. Michaels, guinea-pigs.....	7 80	
May 12.	72.	To Lederle Antitoxin Laboratories, vials and plugs.....	264 16	
May 19.	73.	To Arthur H. Thomas, Philadelphia, Pa., laboratory supplies.....	24 40	
May 19.	74.	To Germa Mfg. Co., St. Louis, Mo., liquid soap.....	15 53	
May 29.	75.	To Wm. C. Abel, M. D., Columbia, S. C., special agent in the suppression of smallpox.....	10 00	
May 31.	76.	To Jas. A. Hayne, M. D., Secretary, incidental expenses.....	45 83	
May 31.	77.	To Miss Nelle Davis, Stenographer, salary.....	50 00	
May 31.	78.	To Steele Glass Co., Philadelphia, Pa., ampuls.....	15 60	
May 31.	79.	To Southern Aseptic Laboratories, absorbent cotton.....	3 24	
May 31.	80.	To Palmetto Ice Co., ice tickets.....	7 00	
May 31.	81.	To Columbia Ry., Gas & Electric Co., gas consumed.....	16 56	
May 31.	82.	To Southern Bell Telephone & Telegraph Co., phone service.....	13 15	
May 31.	83.	To H. M. Alexander & Co., Marietta, Pa., diphtheria antitoxin.....	178 85	
May 31.	84.	To Western Union Telegraph Co., official telegrams.....	4 02	
June 2.	85.	To Waverley Drug Co., rubber gloves.....	2 50	
June 2.	86.	To The Palmetto National Bank, rent of offices.....	40 00	
June 2.	87.	To Central Drug Co., laboratory supplies.....	23 95	
June 2.	88.	To Southern Express Co., express on various packages.....	5 53	
June 7.	89.	To J. T. McCaw, office supplies.....	25 55	
June 7.	90.	To Spencer Lens Co., Buffalo, N. Y., lamps.....	4 27	
June 12.	91.	To Lorick & Lowrance, white enamel, brush, etc.....	4 00	
June 12.	92.	To Steele Glass Co., Philadelphia, Pa., ampuls.....	26 00	
June 23.	93.	To R. M. Hammond, M. D., Montmorenci, S. C., special agent in the suppression of smallpox.....	5 00	
June 30.	94.	To Miss Nelle Davis, Stenographer, salary.....	50 00	
June 30.	95.	To Jas. A. Hayne, M. D., Secretary, incidental expenses.....	55 21	
June 30.	96.	To Columbia Ry., Gas & Electric Co., gas consumed.....	15 73	
June 30.	97.	To Palmetto Ice Co., ice tickets.....	7 00	
June 30.	98.	To Southern Bell Telephone & Telegraph Co., phone service.....	19 10	
June 30.	99.	To National Vaccine & Antitoxin Institute, Washington, D. C., vaccine virus.....	535 47	
June 30.	100.	To West Disinfecting Co., Atlanta, Ga., drinking cups, sweeping compound.....	22 50	
July 1.	101.	To Southern Scale & Fixture Co., refrigerator.....	75 00	
July 1.	102.	To Steele Glass Co., Philadelphia, Pa., ampuls.....	70 20	
July 1.	103.	To Central Drug Co., laboratory supplies.....	9 10	
July 1.	104.	To Lorick & Lowrance, materials for repairs at laboratory.....	1 05	
July 1.	105.	To Western Union Telegraph Co., official telegrams.....	4 27	
July 1.	106.	To The Palmetto National Bank, rent of offices.....	40 00	
July 8.	107.	To H. M. Alexander & Co., Marietta, Pa., diphtheria antitoxin.....	232 65	
July 8.	108.	To Southern Express Co., express on various parcels.....	8 54	
July 8.	109.	To Southern Aseptic Laboratories, absorbent cotton.....	3 78	
July 8.	110.	To H. J. Bassler Co., running gas pipe at laboratory.....	6 27	
July 8.	111.	To C. D. Stanley, boiler and pans for use at laboratory.....	2 90	



Voucher		No.		
1916				
July 8.	112.	To Steele Glass Co., Philadelphia, Pa., ampuls.....	23	40
July 15.	113.	To Ticket Agent, Southern Railway Co., mileage book—Form Z—for Dr. F. A. Coward, Directory of Laboratory.....	20	00
July 15.	114.	To D. Appleton & Co., New York, N. Y., books.....	34	78
July 25.	115.	To F. A. Coward, M. D., expenses to New York, as directed by Executive Committee for instructions as to precautions used to suppress infantile paralysis.....	75	25
July 29.	116.	To J. T. McCaw, safe deposit box.....	7	50
July 31.	117.	To Miss Nelle Davis, Stenographer, salary.....	50	00
July 31.	118.	To Wm. H. Coleman, P. M., postage stamps for use at laboratory....	25	00
July 31.	119.	To Jas. A. Hayne, M. D., Secretary, incidental expenses.....	46	19
July 31.	120.	To Columbia Ry., Gas & Electric Co., gas consumed.....	9	13
July 31.	121.	To Palmetto Ice Co., ice tickets.....	14	00
July 31.	122.	To G. M. Carpenter, office supplies.....	7	40
July 31.	123.	To Western Union Telegraph Co., official telegrams.....	10	80
Aug. 1.	124.	To Southern Bell Telephone & Telegraph Co., phone service.....	22	65
Aug. 1.	125.	To The Palmetto National Bank, rent of offices.....	40	00
Aug. 1.	126.	To Columbia Paper Co., twine.....	1	15
Aug. 1.	127.	To The R. L. Bryan Co., printed stamped envelopes.....	45	00
Aug. 8.	128.	To H. M. Alexander & Co., Marietta, Pa., diphtheria antitoxin.....	228	80
Aug. 8.	129.	To W. H. Coleman, P. M., postage stamps.....	25	00
Aug. 16.	130.	To J. T. McCaw, multigraphing letters, circulars, health certificates (infantile paralysis epidemic), etc.....	78	60
Aug. 23.	131.	To W. H. Coleman, P. M., postage stamps.....	25	00
Aug. 23.	132.	To W. H. Coleman, P. M., postage stamps for laboratory.....	25	00
Aug. 25.	133.	To J. T. McCaw, multigraphed letters, health certificates, etc.....	24	40
Aug. 31.	134.	To Southern Express Co., express on various parcels.....	3	09
Aug. 31.	135.	To F. A. Coward, M. D., expenses to Winstboro and Rock Hill, lecture and investigation.....	9	55
Aug. 31.	136.	To Miss Nelle Davis, Stenographer, salary.....	50	00
Aug. 31.	137.	To The Daggett Printing Co., Charleston, S. C., printing water analyses forms pads.....	4	35
Aug. 31.	138.	To Columbia Paper Co., wrapping paper and twine.....	4	20
Aug. 31.	139.	To Precious Metals Tempering Co., Whitestone, R. I., Hypo. Needles B & W 22g.....	6	00
Aug. 31.	140.	To Steele Glass Co., Philadelphia, Pa., ampuls.....	26	00
Aug. 31.	141.	To Union Paper Co., New York, N. Y., cases Mla. and Para.....	34	78
Aug. 31.	142.	To The Surgical Selling Co., Atlanta, Ga., cc. syringes.....	5	11
Aug. 31.	143.	To H. J. Bassler Co., repairing sterilizer.....	2	20
Aug. 31.	144.	To The State Co., printing letter heads.....	12	15
Aug. 31.	145.	To Central Drug Co., laboratory supplies.....	17	45
Aug. 31.	146.	To Barnum Trunk Co., Minneapolis, Minn., field laboratory case....	7	00
Aug. 31.	147.	To Jas. A. Hayne, M. D., Secretary, incidental expenses.....	62	22
Sep. 1.	148.	To Southern Bell Telephone & Telegraph Co., phone service.....	53	31
Sep. 1.	149.	To Western Union Telegraph Co., official telegrams.....	32	95
Sep. 1.	150.	To Columbia Ry., Gas & Electric Co., gas consumed.....	21	90
Sep. 1.	151.	To The Palmetto National Bank, rent of offices.....	40	00
Sep. 1.	152.	To Palmetto Ice Co., ice tickets.....	14	00
Sep. 1.	153.	To G. M. Carpenter, office supplies.....	2	95
Sep. 1.	154.	To The R. L. Bryan Co., printed stamped envelopes.....	46	00
Sep. 1.	155.	To The Letter Shop, multigraphed letters.....	1	35
Sep. 5.	156.	To J. T. McCaw, multigraphed letters, circulars, etc., regarding infantile paralysis.....	64	90
Sep. 5.	157.	To H. M. Alexander & Co., Marietta, Pa., diphtheria antitoxin.....	711	20
Sep. 5.	158.	To Arthur H. Thomas Co., Philadelphia, Pa., laboratory supplies.....	151	87
Sep. 5.	159.	To Central Drug Co., laboratory supplies.....	9	70
Sep. 5.	160.	To The University Press, E. L. Green, Mgr., printing notices to physicians.....	5	65
Sep. 5.	161.	To Underwood Typewriter Co., repairing typewriter.....	1	05
Sep. 13.	162.	To Lorick & Lowrance, repairs to laboratory equipment.....	2	60
Sep. 13.	163.	To W. H. Coleman, P. M., postage stamps.....	25	00
Sep. 13.	164.	To W. H. Coleman, P. M., postage stamps.....	25	00
Sep. 30.	165.	To Miss Nelle Davis, Stenographer, salary.....	50	00
Oct. 10.	166.	To W. H. Coleman, P. M., postage stamps for laboratory.....	25	00
Oct. 10.	167.	To Southern Bell Telephone & Telegraph Co., phone service.....	33	00
Oct. 10.	168.	To Columbia Ry., Gas & Electric Co., gas consumed.....	15	73
Oct. 10.	169.	To W. H. Coleman, P. M., postage stamps.....	25	00
Oct. 10.	170.	To Western Union Telegraph Co., official telegrams.....	21	49
Oct. 10.	171.	To The Palmetto National Bank, rent of offices.....	40	00
Oct. 10.	172.	To National Vaccine & Antitoxin Institute, Washington, D. C., vaccine virus.....	893	43
Oct. 10.	173.	To Schieffelin & Co., New York, N. Y., Tubes Loeffler Blood Serum Culture.....	16	80
Oct. 10.	174.	To Palmetto Ice Co., ice tickets.....	14	00
Oct. 10.	175.	To J. T. McCaw, multigraphed letters, etc.....	16	25
Oct. 10.	176.	To Jas. A. Hayne, M. D., Secretary, incidental expenses.....	57	88
Oct. 13.	177.	To S. T. Carter, State Treasurer, premium on Policies Nos. 572-573— insurance on office and laboratory equipment.....	17	00
Oct. 13.	178.	To C. I. Green, M. D., Orangeburg, special agent in the suppression of smallpox.....	15	00

Voucher		No.		
1916				
Oct. 20.	179.		To H. M. Alexander & Co., Marietta, Pa., vaccine virus.....	1,518 35
Oct. 23.	180.		To Ticket Agent, Southern Railway Co., mileage book for Dr. F. A. Coward, Directory of Laboratory.....	20 00
Oct. 30.	181.		To J. T. McCaw, printing posters, requisition books, etc.....	36 85
Oct. 30.	182.		To L. A. Riser, M. D., fair exhibit.....	27 65
Oct. 31.	183.		To Miss Nelle Davis, Stenographer, salary.....	50 00
Nov. 1.	184.		To Southern Bell Telephone & Telegraph Co., phone service.....	22 55
Nov. 1.	185.		To Columbia Ry., Gas & Electric Co., gas consumed.....	16 50
Nov. 1.	186.		To Western Union Telegraph Co., official telegrams.....	17 29
Nov. 1.	187.		To Jas. A. Hayne, M. D., Secretary, incidental expenses.....	56 05
Nov. 1.	188.		To W. H. Coleman, P. M., postage stamps.....	25 00
Nov. 1.	189.		To The Palmetto National Bank, rent of offices.....	40 00
Nov. 1.	190.		To Columbia Lumber & Mfg. Co., lumber.....	11 22
Nov. 1.	191.		To Columbia Paper Co., twine.....	1 50
Nov. 1.	192.		To Palmetto Ice Co., ice tickets.....	7 00
Nov. 1.	193.		To The Waverley Drug Co., rubber gloves.....	2 50
Nov. 1.	194.		To National Vaccine & Antitoxin Institute, vials.....	24 50
Nov. 1.	195.		To Perry-Mann Electric Co., Watt lamps, etc.....	26 07
Nov. 1.	196.		To Lorrick & Lowrance, materials for exhibits at State fair.....	6 50
Nov. 1.	197.		To Southern Aseptic Laboratories, absorbent cotton.....	5 20
Nov. 9.	198.		To Columbia Seal & Stamp Co., office supplies.....	2 25
Nov. 9.	199.		To Mr. Baxter Owings, salary (extra help).....	50 00
Nov. 11.	200.		To Ticket Agent, Southern Railway Co., mileage book for Dr. F. A. Coward, Director of Laboratory.....	20 00
Nov. 18.	201.		To F. A. Coward, M. D., Director of Laboratory, expenses to Cincinnati and Atlanta, meeting of American Public Health Association and Southern Medical Association.....	75 60
Nov. 22.	202.		To G. M. Carpenter, office supplies.....	10 40
Nov. 22.	203.		To J. L. Powe, M. D., Hartsville, services rendered in the suppression of scarlet fever.....	5 00
Nov. 22.	204.		To Arthur H. Thomas Co., Philadelphia, Pa., laboratory supplies....	54 06
Nov. 22.	205.		To J. T. McCaw, office supplies.....	8 90
Nov. 22.	206.		To H. M. Alexander & Co., Marietta, Pa., tetanus antitoxin.....	41 40
Nov. 22.	207.		To H. K. Mulford Co., Philadelphia, Pa., antimeningitis serum.....	54 00
Nov. 23.	208.		To J. T. McCaw, multigraphed letters, etc.....	29 06
Nov. 27.	209.		To L. A. Riser, M. D., exhibit at county fairs.....	30 50
Nov. 27.	210.		To The R. L. Bryan Co., printed stamped envelopes.....	23 50
Nov. 27.	211.		To West Disinfecting Co., Atlanta, Ga., paper towels and cabinet....	17 50
Nov. 27.	212.		To The Morgan Co., Philadelphia, Pa., ampuls.....	163 35
Nov. 29.	213.		To Jas. A. Hayne, M. D., Secretary, incidental expenses.....	53 55
Nov. 29.	214.		To Miss Nelle Davis, Stenographer, salary.....	50 00
Nov. 29.	215.		To W. H. Coleman, P. M., postage stamps.....	25 00
Nov. 29.	216.		To W. H. Coleman, P. M., postage stamps for laboratory.....	25 00
Dec. 1.	217.		To Columbia Ry., Gas & Electric Co., gas consumed.....	15 10
Dec. 1.	218.		To J. T. McCaw, envelopes and fountain pen.....	9 00
Dec. 4.	219.		To H. K. Mulford Co., Philadelphia, Pa., typhoid bacterin and vaccine virus.....	38 59
Dec. 5.	220.		To Southern Bell Telephone & Telegraph Co., phone service.....	15 31
Dec. 5.	221.		To The Western Union Telegraph Co., official telegrams.....	3 60
Dec. 5.	222.		To The Palmetto Ice Co., ice tickets.....	7 00
Dec. 5.	223.		To Precious Metals Tempering Co., New York, N. Y., Tem. Gold Needles.....	3 60
Dec. 9.	224.		To J. T. McCaw, office supplies.....	4 50
Dec. 16.	225.		To F. A. Coward, M. D., expenses to Chapin and Camden—investigation of infantile paralysis and meningitis.....	9 00
Dec. 16.	226.		To National Vaccine & Antitoxin Institute, Washington, D. C., typhoid bacterin.....	50 00
Dec. 16.	227.		To The Daggett Printing Co., printing letter heads for Dr. Parker, State Chemist.....	3 75
Dec. 16.	228.		To Columbia Lumber & Mfg. Co., lumber.....	19 70
Dec. 16.	229.		To Gulf & Atlantic Insurance Co., premium on bond.....	7 00
Dec. 16.	230.		To The Palmetto National Bank, rent of offices.....	40 00
Dec. 16.	231.		To Central Drug Co., laboratory supplies.....	27 95
Dec. 16.	232.		To The Waverley Drug Co., rubber gloves.....	2 50
Dec. 16.	233.		To Columbia Paper Co., wrapping paper.....	12 36
Dec. 18.	234.		To National Vaccine & Antitoxin Institute, Washington, D. C., diphtheria antitoxin.....	545 50
Dec. 23.	235.		To Miss Nelle Davis, Stenographer, salary.....	50 00
Dec. 23.	236.		To J. T. Howell, M. D., Field Agent, salary.....	150 00
Dec. 23.	237.		To F. M. Routh, M. D., Field Agent, salary.....	150 00
Dec. 23.	238.		To W. H. Coleman, P. M., postage stamps.....	25 00
Dec. 23.	239.		To W. H. Coleman, P. M., postage stamps for laboratory.....	25 00
Dec. 23.	240.		To Miss Lottie Washington, extra services in office.....	25 00
Dec. 23.	241.		To R. H. McFadden, M. D., Chester, special agent in the suppression of smallpox.....	20 00
Dec. 26.	242.		To Columbia Seal & Stamp Co., memorandum pads.....	10 00
Dec. 26.	243.		To H. M. Alexander & Co., Marietta, Pa., diphtheria antitoxin.....	1,402 15
Dec. 28.	244.		To J. T. Howell, M. D., Field Agent, incidental expenses.....	74 95
Dec. 28.	245.		To Southern Aseptic Laboratories, absorbent cotton.....	4 83
Dec. 29.	246.		To W. H. Coleman, P. M., postage stamps for laboratory.....	25 00



Voucher			
1916	No.		
Dec. 29.	247.	To W. H. Coleman, P. M., postage stamps.....	25 00
Dec. 29.	248.	To F. M. Routh, M. D., Field Agent, incidental expenses.....	65 35
Dec. 29.	249.	To Lutheran Board of Education, printing cards.....	3 25
Dec. 29.	250.	To The Western Union Telegraph Co., official telegrams.....	5 96
Dec. 29.	251.	To Jas. A. Hayne, M. D., Secretary, incidental expenses.....	84 23
Dec. 29.	252.	To Columbia Ry., Gas & Electric Co., gas consumed.....	16 20
Dec. 29.	253.	To Palmetto Ice Co., ice tickets.....	7 00
Dec. 29.	254.	To Southern Bell Telephone & Telegraph Co., phone service.....	19 85
Dec. 29.	255.	To Union Paper Co., New York, N. Y., mailing cases.....	35 70
		(Bills contracted during 1916 and paid during 1917):	
Jan. 4.	256.	To National Vaccine & Antitoxin Institute, Washington, D. C., vaccine virus.....	265 46
Jan. 5.	257.	To H. K. Mulford Co., Philadelphia, Pa., Anti-meningitis serum.....	18 00
Jan. 5.	258.	To H. K. Mulford Co., Philadelphia, Pa., Tetanus Antitoxin.....	24 30
Jan. 9.	259.	To L. A. Riser, M. D., services rendered during December.....	166 66
Jan. 9.	260.	To L. A. Riser, M. D., expenses during December.....	44 65
Jan. 13.	261.	To Todd Protectograph Co., Rochester, N. Y., one protectograph....	19 60
Jan. 15.	262.	To Central Drug Co., laboratory supplies.....	8 25
Jan. 15.	263.	To Columbia Seal & Stamp Co., gummed paper.....	4 20
Jan. 15.	264.	To Lorick & Lowrance, material for filing cases for office.....	3 90
Jan. 15.	265.	To Underwood Typewriter Co., Underwood typewriter.....	83 03
Jan. 15.	266.	To The R. L. Bryan Co., office tables.....	16 00
Jan. 15.	267.	To Baxter Owings, three days services at laboratory.....	5 00
Jan. 15.	268.	To Arthur H. Thomas, Philadelphia, Pa., ampuls.....	71 60
Jan. 15.	269.	To J. T. McCaw, leather office bag and ink.....	13 25
Jan. 15.	270.	To American Medical Association, Chicago, Ill., pamphlets.....	50 25
Jan. 15.	271.	To National Vaccine & Antitoxin Institute, Washington, D. C., one-half expense of smallpox cards, postage and delivery tubes....	161 68
Jan. 15.	272.	To National Vaccine & Antitoxin Institute, Washington, D. C., diphtheria antitoxin (December).....	647 90
			<hr/> \$16,401 78
Appropriation .....			\$20,000 00
Expenditures .....			16,401 78
Balance .....			<hr/> \$ 3,598 22
Outstanding Bills (?) Not yet presented.			

## PRINTING, POSTAGE AND STATIONERY.

Feb. 28.	1.	To W. H. Coleman, P. M., postage stamps.....	\$25 00
Mar. 7.	2.	To R. L. Bryan Co., stamped, printed, envelopes.....	23 50
Mar. 7.	3.	To The Letter Shop, multigraphed letters.....	3 00
Mar. 7.	4.	To Band & White, Spartanburg, pamphlets.....	48 50
Mar. 7.	5.	To American Medical Association, Chicago, Ill., pamphlets.....	26 00
Mar. 7.	6.	To W. H. Coleman, P. M., postage stamps.....	25 00
Mar. 10.	7.	To W. H. Coleman, P. M., postage stamps.....	25 00
Mar. 10.	8.	To The University Press, printing.....	21 00
Apr. 8.	9.	To Cary Printing Co., printing blanks "Corpse Transportation".....	44 25
Apr. 8.	10.	To The State Co., stamped, printed, envelopes.....	22 50
Apr. 13.	11.	To W. H. Coleman, P. M., postage stamps.....	25 00
Apr. 13.	12.	To W. H. Coleman, P. M., postage stamps.....	25 00
Apr. 25.	13.	To J. T. McCaw, printing, etc.....	117 35
Apr. 29.	14.	To R. L. Bryan Co., printing, etc.....	73 55
May 12.	15.	To R. L. Bryan Co., printing.....	33 15
May 12.	16.	To J. T. McCaw, printing.....	89 59
May 27.	17.	To W. H. Coleman, P. M., postage stamps.....	25 00
May 27.	18.	To W. H. Coleman, P. M., postage stamps.....	25 00
June 21.	19.	To W. H. Coleman, P. M., postage stamps.....	25 00
June 30.	20.	To American Medical Association, Chicago, Ill., pamphlets.....	10 00
June 30.	21.	To The State Co., printing.....	7 65
June 30.	22.	To R. L. Bryan Co., stamped, printed, envelopes.....	44 00
June 30.	23.	To W. H. Coleman, P. M., postage stamps.....	25 00
June 30.	24.	To W. H. Coleman, P. M., postage stamps.....	25 00
July 1.	25.	To J. T. McCaw, printing.....	39 65
July 27.	26.	To Lutheran Board of Publication, printing.....	26 50
July 29.	27.	To J. T. McCaw, printing.....	17 80
Oct. 30.	28.	To American Medical Association, Chicago, Ill., pamphlets.....	14 75
Nov. 1.	29.	To W. H. Coleman, P. M., postage stamps.....	25 00
Nov. 1.	30.	To R. L. Bryan Co., stamped, printed, envelopes.....	23 50
Nov. 1.	31.	To The Daggett Printing Co., Charleston, envelopes.....	4 00
Dec. 26.	32.	To The R. L. Bryan Co., stamped, printed, envelopes.....	23 50
Dec. 29.	33.	To W. H. Coleman, P. M., postage stamps.....	11 26
			<hr/> \$1,000 00
Appropriation .....			\$1,000 00
Expenditures .....			<hr/> 1,000 00

Voucher		STATE BOARD OF HEALTH.	
1916	No.		
Mar. 1.	1.	To W. J. Burdell, M. D., expenses to special meeting of Executive Committee.....	\$14 60
Mar. 1.	2.	To W. W. Dodson, M. D., expenses to special meeting of Executive Committee.....	40 60
Mar. 1.	3.	To Wm. Egleston, M. D., expenses to special meeting of Executive Committee.....	23 60
Mar. 1.	4.	To D. B. Frontis, M. D., expenses to special meeting of Executive Committee.....	16 00
Mar. 1.	5.	To C. C. Gambrell, M. D., expenses to special meeting of Executive Committee.....	33 40
Mar. 1.	6.	To E. A. Hines, M. D., expenses to special meeting of Executive Committee.....	42 60
Mar. 1.	7.	To W. M. Lester, M. D., expenses to special meeting of Executive Committee.....	4 00
Mar. 6.	8.	To McGraw-Hill Book Co., New York, N. Y., book.....	6 00
Mar. 28.	9.	To W. J. Burdell, M. D., expenses to committee meeting.....	18 60
Mar. 28.	10.	To Wm. Egleston, M. D., expenses to committee meeting.....	25 60
Mar. 28.	11.	To C. C. Gambrell, M. D., expenses to committee meeting.....	33 40
Apr. 24.	12.	To W. J. Burdell, M. D., expenses to annual meeting of Executive Committee, Charleston.....	54 60
Apr. 24.	13.	To C. C. Gambrell, M. D., expenses to annual meeting of Executive Committee, Charleston.....	63 40
Apr. 24.	14.	To E. A. Hines, M. D., expenses to annual meeting of Executive Committee, Charleston.....	76 60
Apr. 24.	15.	To Robt. Wilson, Jr., M. D., attendance to annual meeting of Executive Committee, Charleston.....	8 00
Apr. 24.	16.	To W. W. Dodson, M. D., expenses to annual meeting Executive Committee, Charleston.....	60 40
Apr. 24.	17.	To Wm. Egleston, M. D., attendance to annual meeting of Executive Committee, Charleston.....	49 00
Apr. 24.	18.	To W. M. Lester, M. D., expenses to annual meeting of Executive Committee, Charleston.....	38 00
May 11.	19.	To J. A. Majors & Co., New Orleans, La., book.....	5 00
May 24.	20.	To American Medical Association, Chicago, Ill., two copies of American Medical Directory.....	16 00
May 24.	21.	To American Medical Association, Chicago, Ill., The Journal American Medical Association.....	5 00
May 24.	22.	To John Wiley & Sons, New York, N. Y., book.....	2 00
June 3.	23.	To A. N. Marquis & Co., book.....	4 75
June 21.	24.	To Peace Printing Co., Greenville, S. C., reprints from S. C. Medical Journal.....	8 20
July 13.	25.	To W. J. Burdell, M. D., expenses to quarterly meeting of Executive Committee.....	18 60
July 13.	26.	To W. W. Dodson, M. D., expenses to quarterly meeting of Executive Committee.....	40 60
July 13.	27.	To Wm. Egleston, M. D., expenses to quarterly meeting of Executive Committee.....	29 60
July 13.	28.	To D. B. Frontis, M. D., expenses to quarterly meeting of Executive Committee.....	16 00
July 13.	29.	To C. C. Gambrell, M. D., expenses to quarterly meeting of Executive Committee.....	33 40
July 13.	30.	To E. A. Hines, M. D., expenses to quarterly meeting of Executive Committee.....	42 60
July 13.	31.	To W. M. Lester, M. D., expenses to quarterly meeting of Executive Committee.....	4 00
July 13.	32.	To Robt. Wilson, Jr., M. D., expenses to quarterly meeting of Executive Committee.....	38 00
Aug. 2.	33.	To Wm. Egleston, M. D., expenses to committee meeting.....	25 60
Aug. 2.	34.	To W. J. Burdell, M. D., expenses to committee meeting.....	18 60
Aug. 2.	35.	To C. C. Gambrell, M. D., expenses to committee meeting.....	33 40
Aug. 22.	36.	To W. M. Lester, M. D., expenses to special meeting of Executive Committee, Isle of Palms.....	40 20
Aug. 24.	37.	To Wm. Egleston, M. D., expenses to special meeting of Executive Committee, Isle of Palms.....	37 40
Aug. 24.	38.	To C. C. Gambrell, M. D., expenses to special meeting of Executive Committee, Isle of Palms.....	59 40
Aug. 24.	39.	To E. A. Hines, M. D., expenses to special meeting of Executive Committee, Isle of Palms.....	74 20
Aug. 24.	40.	To Wm. J. Burdell, M. D., expenses to special meeting of Executive Committee, Isle of Palms.....	50 40
Aug. 29.	41.	To W. W. Dodson, M. D., expenses to special meeting of Executive Committee, Isle of Palms.....	64 00
Oct. 18.	42.	To W. J. Burdell, M. D., expenses to quarterly meeting of Executive Committee.....	18 60
Oct. 18.	43.	To W. W. Dodson, M. D., expenses to quarterly meeting of Executive Committee.....	40 60
Oct. 18.	44.	To Wm. Egleston, M. D., expenses to quarterly meeting of Executive Committee.....	30 50
Oct. 18.	45.	To D. B. Frontis, M. D., expenses to quarterly meeting of Executive Committee.....	



1916		Voucher No.		
			Committee	20 00
Oct. 18.	46.	To C. C. Gambrell, M. D., expenses to quarterly meeting of Executive Committee		33 40
Oct. 18.	47.	To E. A. Hines, M. D., expenses to quarterly meeting of Executive Committee		42 60
Oct. 18.	48.	To W. M. Lester, M. D., expenses to quarterly meeting of Executive Committee		4 00
Oct. 18.	49.	To Robt. Wilson, Jr., M. D., expenses to quarterly meeting of Executive Committee		38 00
Oct. 19.	50.	To W. J. Burdell, M. D., expenses to quarterly meeting of Executive Committee		4 00
Oct. 19.	51.	To C. C. Gambrell, M. D., expenses to quarterly meeting of Executive Committee		4 00
Oct. 19.	52.	To W. M. Lester, M. D., expenses to quarterly meeting of Executive Committee		4 00
Oct. 19.	53.	To Robt. Wilson, Jr., M. D., expenses to quarterly meeting of Executive Committee		4 00
Oct. 20.	54.	To American City, New York, N. Y., subscription to books and health pamphlets		3 00
Dec. 6.	55.	To Wm. Egleston, M. D., expenses—inspection of State Penal and Charitable Institutions		42 60
Dec. 14.	56.	To C. C. Gambrell, M. D., expenses to quarterly meeting of Executive Committee		40 40
Dec. 14.	57.	To Robt. Wilson, Jr., M. D., expenses to quarterly meeting of Executive Committee		38 00
Dec. 14.	58.	To W. W. Dodson, M. D., expenses to quarterly meeting of Executive Committee		40 60
Dec. 14.	59.	To W. J. Burdell, M. D., expenses to quarterly meeting of Executive Committee		34 70
Dec. 14.	60.	To D. B. Frontis, M. D., expenses to quarterly meeting of Executive Committee and inspection of State colleges		41 60
Dec. 14.	61.	To W. M. Lester, M. D., attending quarterly meeting and the inspection of asylum and penitentiary		12 00
Dec. 14.	62.	To Wm. Egleston, M. D., expenses to quarterly meeting of Executive Committee		33 40
Dec. 14.	63.	To E. A. Hines, M. D., expenses to quarterly meeting of Executive Committee and the inspection of State colleges		95 30
Dec. 26.	64.	To The Bobbs-Merrill Co., Indianapolis, Ind., book		1 25
Dec. 26.	65.	To Lee & Febiger, Philadelphia, Pa., subscription to The American Journal of the Medical Science		5 00
Dec. 26.	66.	To Little, Brown & Co., Boston, Mass., book		5 00
Dec. 26.	67.	To American Public Health Association, annual dues		5 00
Dec. 26.	68.	To State and Provincial Boards of Health of North America, Boston, Mass., assessment		10 00
Dec. 28.	69.	To W. M. Lester, M. D., inspection of Old Soldiers' Home		4 00
1917.		(Bills contracted during 1916 and paid during 1917):		
Jan. 6.	70.	To J. T. McCaw, cards, etc.		29 40
				\$1,960 30
Appropriation				\$2,000 00
Expenditures				1,960 30
Balance				\$ 39 70
Outstanding Bills (?)				

## TRAVELING EXPENSES STATE HEALTH OFFICER.

Mar. 3.	1.	To Ticket Agent, Southern Railroad Co., mileage book—one thousand miles	\$20 00
Mar. 3.	2.	To Jas. A. Hayne, M. D., State Health Officer, traveling expenses	47 20
Mar. 14.	3.	To Jas. A. Hayne, M. D., State Health Officer, traveling expenses	23 15
Mar. 20.	4.	To Ticket Agent, Southern Railroad Co., mileage book—one thousand miles	20 00
Mar. 31.	5.	To Jas. A. Hayne, M. D., State Health Officer, traveling expenses	42 40
Apr. 15.	6.	To Ticket Agent, Southern Railroad Co., mileage book—one thousand miles	20 00
Apr. 29.	7.	To Jas. A. Hayne, M. D., State Health Officer, traveling expenses	33 25
May 6.	8.	To Ticket Agent, Southern Railroad Co., mileage book—one thousand miles	20 00
May 11.	9.	To Ticket Agent, Southern Railroad Co., mileage book—one thousand miles	20 00
May 31.	10.	To Jas. A. Hayne, M. D., State Health Officer, traveling expenses	94 75
June 5.	11.	To Ticket Agent, Southern Railroad Co., mileage book—one thousand miles	20 00
June 24.	12.	To Ticket Agent, Southern Railroad Co., mileage book—one thousand miles	20 00
June 30.	13.	To Jas. A. Hayne, M. D., State Health Officer, traveling expenses	122 25
Sep. 1.	14.	To Jas. A. Hayne, M. D., State Health Officer, traveling expenses	59 10
Sep. 30.	15.	To Ticket Agent, Southern Railroad Co., mileage book—one thousand miles	20 00

Voucher No.			
1916			
Oct. 23.	16.	To Ticket Agent, Southern Railroad Co., mileage book—one thousand miles	20 00
Oct. 31.	17.	To Jas. A. Hayne, M. D., State Health Officer, traveling expenses....	79 80
Nov. 29.	18.	To Jas. A. Hayne, M. D., State Health Officer, traveling expenses....	49 20
Dec. 14.	19.	To Ticket Agent, Southern Railroad Co., mileage book—two thousand miles	40 00
Dec. 29.	20.	To Ticket Agent, Southern Railroad Co., mileage book—two thousand miles	40 00
Dec. 29.	21.	To Jas. A. Hayne, M. D., State Health Officer, traveling expenses....	18 45
			<hr/>
			\$849 55
Appropriation .....			\$1,000 00
Expenditures .....			849 55
			<hr/>
Balance .....			\$ 150 45

## BUREAU VITAL STATISTICS.

Jan. 31.	1.	To Mrs. J. L. Remly, Filing Clerk, salary.....	\$60 00
Feb. 28.	2.	To W. H. Coleman, P. M., postage stamps.....	25 00
Feb. 29.	3.	To Miss Pearl Washington, Stenographer, salary.....	100 00
Feb. 29.	4.	To Mrs. I. L. Remly, Filing Clerk, salary.....	60 00
Feb. 29.	5.	To C. W. Miller, Chief Clerk, salary.....	200 00
Mar. 3.	6.	To Miss Marie Lindsay, Index Clerk, salary.....	70 00
Mar. 3.	7.	To Miss Charlotte Cain, extra services, salary.....	9 00
Mar. 3.	8.	To Southern Bell Telephone & Telegraph Co., phone service.....	12 00
Mar. 3.	9.	To G. M. Carpenter, office supplies.....	7 35
Mar. 10.	10.	To Capital City Steam Laundry & Dye Works, towel service.....	2 00
Mar. 31.	11.	To Mrs. H. F. Remley, Filing Clerk, salary.....	60 00
Mar. 31.	12.	To Miss Pearl Washington, Stenographer, salary.....	50 00
Mar. 31.	13.	To Miss Marie Lindsay, Index Clerk, salary.....	35 00
Mar. 31.	14.	To Miss Charlotte Cain, extra services, salary.....	15 00
Mar. 31.	15.	To G. M. Carpenter, office supplies.....	3 55
Mar. 31.	16.	To The R. L. Bryan Co., office supplies.....	4 25
Apr. 25.	17.	To J. T. McCaw, printing, etc.....	128 55
Apr. 29.	18.	To C. W. Miller, Chief Clerk, salary.....	100 00
Apr. 29.	19.	To C. W. Miller, Chief Clerk, salary.....	125 00
Apr. 29.	20.	To Mrs. I. L. Remly, Filing Clerk, salary.....	60 00
Apr. 29.	21.	To Miss Pearl Washington, Stenographer, salary.....	50 00
Apr. 29.	22.	To Miss Charlotte Cain, extra services, salary.....	35 00
Apr. 29.	23.	To The R. L. Bryan Co., office supplies.....	5 00
Apr. 29.	24.	To Burroughs Adding Machine Co., Adding Machine.....	171 50
Apr. 29.	25.	To Southern Bell Telephone & Telegraph Co., phone service.....	8 00
May 24.	26.	To Webb's Art Store, picture moulding, glass, etc.....	4 64
May 25.	27.	To W. H. Coleman, P. M., postage stamps.....	25 00
May 31.	28.	To C. W. Miller, Chief Clerk, salary.....	125 00
May 31.	29.	To Miss Pearl Washington, Filing Clerk, salary.....	60 00
May 31.	30.	To Miss Emily Rouquie, Stenographer, salary.....	50 00
May 31.	31.	To Miss Charlotte Cain, Index Clerk, salary.....	35 00
June 3.	32.	To Southern Bell Telephone & Telegraph Co., phone service.....	4 00
June 7.	33.	To J. T. McCaw, printing certificates, etc.....	367 45
June 30.	34.	To Miss Pearl Washington, Filing Clerk, salary.....	60 00
June 30.	35.	To C. W. Miller, Chief Clerk, salary.....	125 00
June 30.	36.	To Miss Emily Rouquie, Stenographer, salary.....	50 00
June 30.	37.	To Miss Charlotte Cain, Index Clerk, salary.....	35 00
June 30.	38.	To Southern Bell Telephone & Telegraph Co., phone service.....	4 40
June 30.	39.	To The R. L. Bryan Co., office supplies.....	1 45
July 1.	40.	To J. T. McCaw, printing certificates, etc.....	394 00
July 12.	41.	To The Sloane Printing Co., printing requisition blanks, cards, etc..	77 10
July 12.	42.	To R. C. Williams & Sons, window shades for office.....	5 25
July 26.	43.	To Miss Charlotte Cain, Index Clerk, salary.....	35 00
July 29.	44.	To J. T. McCaw, printing certificates.....	67 45
July 31.	45.	To C. W. Miller, Chief Clerk, salary.....	125 00
July 31.	46.	To Miss Pearl Washington, Filing Clerk, salary.....	60 00
July 31.	47.	To Miss Emily Rouquie, Stenographer, salary.....	50 00
July 31.	48.	To G. M. Carpenter, office supplies.....	12 40
July 31.	49.	To The R. L. Bryan Co., office supplies.....	3 25
July 31.	50.	To Southern Bell Telephone & Telegraph Co., phone service.....	4 00
Aug. 10.	51.	To J. T. McCaw, printing certificates, etc.....	39 50
Aug. 19.	52.	To W. H. Coleman, P. M., postage stamps.....	25 00
Aug. 25.	53.	To J. T. McCaw, printing.....	29 70
Aug. 26.	54.	To Miss Pearl Washington, File Clerk, salary.....	60 00
Aug. 31.	55.	To Miss Charlotte Cain, Index Clerk, salary.....	35 00
Aug. 31.	56.	To Miss Emily Rouquie, Stenographer, salary.....	50 00
Aug. 31.	57.	To C. W. Miller, Chief Clerk, salary.....	125 00
Sep. 1.	58.	To Southern Bell Telephone & Telegraph Co., phone service.....	4 00
Sep. 1.	59.	To G. M. Carpenter, office supplies.....	2 00
Sep. 1.	60.	To The State Co., printing letter heads.....	12 15
Sep. 1.	61.	To The R. L. Bryan Co., office supplies.....	1 75



Voucher No.			
1916			
Sep. 1.	62.	To Columbia Seal & Stamp Co., cushion stamp.....	1 65
Sep. 1.	63.	To Perry-Mann Electric Co., repairs to fan.....	2 00
Sep. 5.	64.	To J. T. McCaw, printing certificates.....	11 00
Sep. 30.	65.	To C. W. Miller, Chief Clerk, salary.....	125 00
Sep. 30.	66.	To Miss Pearl Washington, Filing Clerk, salary.....	60 00
Sep. 30.	67.	To Miss Emily Rouquie, Stenographer, salary.....	50 00
Sep. 30.	68.	To Miss Charlotte Cain, Index Clerk, salary.....	35 00
Oct. 10.	69.	To J. T. McCaw, printing, etc.....	29 80
Oct. 10.	70.	To Southern Bell Telephone & Telegraph Co., phone service.....	4 00
Oct. 30.	71.	To J. T. McCaw, printing and stamped envelopes.....	23 50
Oct. 31.	72.	To C. M. Miller, Chief Clerk, salary.....	125 00
Oct. 31.	73.	To Miss Pearl Washington, Filing Clerk, salary.....	60 00
Oct. 31.	74.	To Miss Emily Rouquie, Stenographer, salary.....	50 00
Oct. 31.	75.	To Miss Charlotte Cain, Index Clerk, salary.....	35 00
Nov. 1.	76.	To Southern Bell Telephone & Telegraph Co., phone service.....	4 00
Nov. 1.	77.	To The R. L. Bryan Co., office supplies.....	1 10
Nov. 18.	78.	To G. M. Carpenter, office supplies.....	1 35
Nov. 18.	79.	To C. W. Miller, Chief Clerk, incidental expenses.....	7 42
Nov. 22.	80.	To J. T. McCaw, card index sections, printing, etc.....	34 00
Nov. 22.	81.	To W. H. Coleman, P. M., postage stamps.....	25 00
Nov. 30.	82.	To Miss Charlotte Cain, Index Clerk, salary.....	35 00
Nov. 30.	83.	To Miss Emily Rouquie, Stenographer, salary.....	50 00
Nov. 30.	84.	To Miss Pearl Washington, Filing Clerk, salary.....	60 00
Nov. 30.	85.	To C. W. Miller, Chief Clerk, salary.....	125 00
Dec. 1.	86.	To J. T. McCaw, printing.....	13 20
Dec. 5.	87.	To Southern Bell Telephone & Telegraph Co., phone service.....	4 00
Dec. 9.	88.	To J. T. McCaw, printing and binding certificates.....	17 60
Dec. 13.	89.	To J. T. McCaw, printing and stamped envelopes.....	23 50
Dec. 13.	90.	To W. H. Coleman, P. M., postage stamps.....	25 00
Dec. 23.	91.	To Miss Charlotte Cain, Index Clerk, salary.....	35 00
Dec. 23.	92.	To Miss Emily Rouquie, Stenographer, salary.....	50 00
Dec. 23.	93.	To Miss Pearl Washington, Filing Clerk, salary.....	60 00
Dec. 23.	94.	To C. W. Miller, Chief Clerk, salary.....	125 00
Dec. 23.	95.	To J. T. McCaw, card index sections.....	36 95
Dec. 26.	96.	To C. W. Miller, Chief Clerk, incidentals.....	4 00
Dec. 29.	97.	To W. H. Coleman, P. M., postage stamps.....	25 00
Dec. 29.	98.	To Southern Bell Telephone & Telegraph Co., phone service.....	4 00
1917.		(Bills contracted during 1916 and paid during 1917):	
Jan. 6.	99.	To J. T. McCaw, card index section, printing certificates, etc.....	37 80
Jan. 15.	100.	To J. T. McCaw, monthly return cards.....	7 00
			\$4,983 56
Appropriation .....			\$5,000 00
Expenditures .....			4,983 56
Balance .....			\$ 16 44
Outstanding Bills (?) .....			

## TWO UNITS FOR INTENSIVE COUNTY HEALTH WORK.

May 6.	1.	To J. T. Howell, M. D., salary.....	\$150 00
May 6.	2.	To J. T. Howell, M. D., incidental expenses.....	104 60
June 3.	3.	To J. T. Howell, M. D., salary.....	150 00
June 3.	4.	To J. T. Howell, M. D., incidental expenses.....	77 04
July 31.	5.	To L. A. Riser, M. D., salary.....	166 67
July 31.	6.	To L. A. Riser, M. D., incidental expenses.....	95 88
Aug. 31.	7.	To L. A. Riser, M. D., salary.....	166 67
Sep. 5.	8.	To L. A. Riser, M. D., incidental expenses.....	87 31
Sep. 5.	9.	To J. T. Howell, M. D., salary.....	150 00
Sep. 5.	10.	To J. T. Howell, M. D., incidental expenses.....	80 39
Sep. 5.	11.	To M. S. Brohum, salary.....	106 00
Oct. 2.	12.	To L. A. Riser, M. D., salary.....	166 67
Oct. 2.	13.	To L. A. Riser, M. D., incidental expenses.....	77 80
Oct. 5.	14.	To F. M. Routh, M. D., salary.....	150 00
Oct. 6.	15.	To J. T. Howell, M. D., salary.....	150 00
Oct. 6.	16.	To F. M. Cain, salary.....	37 00
Oct. 6.	17.	To J. T. Howell, M. D., incidental expenses.....	86 01
Oct. 7.	18.	To F. M. Routh, M. D., salary.....	150 00
Oct. 30.	19.	To L. A. Riser, M. D., salary.....	166 67
Oct. 30.	20.	To L. A. Riser, M. D., incidental expenses.....	77 35
Oct. 31.	21.	To J. T. Howell, M. D., salary.....	150 00
Oct. 31.	22.	To F. M. Cain, salary.....	75 00
Oct. 31.	23.	To F. M. Cain, carpenter work in Union School District.....	75 00
Oct. 31.	24.	To J. T. Howell, M. D., incidental expenses.....	90 25
Oct. 31.	25.	To F. M. Routh, M. D., office expenses.....	22 95
Oct. 31.	26.	To Miss Lallah Kennedy, salary.....	13 95
Oct. 31.	27.	To Crosson Roof, salary.....	35 00
Oct. 31.	28.	To F. M. Routh, M. D., incidental expenses.....	82 30
Nov. 27.	29.	To L. A. Riser, M. D., salary.....	166 67
Nov. 30.	30.	To F. M. Routh, M. D., salary.....	150 00

Voucher		No.		
1916				
Nov. 30.	31.	To F. M. Routh, M. D., office expenses.....	15 60	
Nov. 30.	32.	To R. C. Roof, salary.....	75 00	
Nov. 30.	33.	To Miss Lallah Kennedy, salary.....	47 00	
Nov. 30.	34.	To F. M. Routh, M. D., incidental expenses.....	84 75	
Dec. 4.	35.	To H. K. Mulford Co., Philadelphia, Pa., chenepodium.....	84 62	
Dec. 4.	36.	To F. M. Routh, M. D., incidental expenses.....	19 70	
1917.		(Bills contracted during 1916 and paid during 1917):		
Jan. 15.	37.	To J. T. McCaw, printing letter heads.....	5 00	
			\$3,588 82	
Appropriation .....			\$3,600 00	
Expenditures .....			3,588 82	
Balance .....			\$ 11 18	

## TUBERCULOSIS CAMP. (SOUTH CAROLINA SANATORIUM).

Mar. 1.	1.	To Geo. Baldwin, trees, shrubs, etc., for grounds.....	\$200 00
Mar. 1.	2.	To Ernest Cooper, M. D., Supt., salary.....	250 00
Mar. 1.	3.	To Mrs. N. J. Burt, Matron, salary.....	100 00
Mar. 1.	4.	To Miss Ruth James, Nurse, salary.....	100 00
Mar. 1.	5.	To Wm. Adams, Mechanic, salary.....	50 00
Mar. 1.	6.	To Wm. Williams, Cook, salary.....	40 00
Mar. 1.	7.	To Alex. Lewis, Waiter, salary.....	24 00
Mar. 1.	8.	To Jack Williams, Laborer, salary.....	21 80
Mar. 6.	9.	To Southern States Supply Co., grate bars and tank heater.....	5 00
Mar. 11.	10.	To Capital City Steam Laundry & Dye Works, laundry.....	52 32
Mar. 11.	11.	To The Murray Drug Co., drugs.....	30 73
Mar. 11.	12.	To Southern Bell Telephone & Telegraph Co., phone service.....	20 00
Mar. 11.	13.	To West Disinfecting Co., Atlanta, Ga., sputum cups.....	35 00
Mar. 31.	14.	To Ernest Cooper, M. D., Supt., salary.....	125 00
Mar. 31.	15.	To Mrs. N. J. Burt, Matron, salary.....	50 00
Mar. 31.	16.	To Miss K. M. Foster, Nurse, salary.....	50 00
Mar. 31.	17.	To Wm. Williams, Cook, salary.....	27 50
Mar. 31.	18.	To Wm. Adams, Mechanic, salary.....	25 00
Mar. 31.	19.	To Alex. Lewis, Waiter, salary.....	12 00
Mar. 31.	20.	To Jack Williams, Laborer, salary.....	12 00
Apr. 3.	21.	To West Disinfecting Co., Atlanta, Ga., salary.....	72 00
Apr. 3.	22.	To Standard Oil Co., Charlotte, N. C., gas engine oil.....	14 58
Apr. 3.	23.	To Southern Bell Telephone & Telegraph Co., phone service.....	9 79
Apr. 11.	24.	To The Murray Drug Co., thermometer, alcohol, etc.....	13 40
Apr. 11.	25.	To Lorick & Lowrance, groceries.....	221 29
Apr. 11.	26.	To Gulf Refining Co., Atlanta, Ga., gasoline.....	12 25
Apr. 11.	27.	To Capital City Steam Laundry & Dye Works, laundry.....	32 55
Apr. 29.	28.	To Mrs. N. J. Burt, Matron, salary.....	50 00
Apr. 29.	29.	To Ernest Cooper, M. D., Supt., salary.....	125 00
Apr. 29.	30.	To Miss K. M. Foster, Nurse, salary.....	50 00
Apr. 29.	31.	To Wm. Williams, Cook, salary.....	22 50
Apr. 29.	32.	To Wm. Adams, Mechanic, salary.....	25 00
Apr. 29.	33.	To Jack Williams, Laborer, salary.....	12 00
Apr. 29.	34.	To Arthur Boler, Waiter, salary.....	8 00
Apr. 29.	35.	To T. P. Sanders, Jr., mulberry posts.....	55 25
Apr. 29.	36.	To Gulf Refining Co., Atlanta, Ga., gasoline.....	19 60
May 1.	37.	To Lorick & Lowrance, groceries.....	159 93
May 1.	38.	To The Murray Drug Co., drugs.....	1 63
May 1.	39.	To Capital City Steam Laundry & Dye Works, laundry.....	29 71
May 1.	40.	To Union Carbide Sales Co., carbide.....	78 79
May 1.	41.	To Southern Bell Telephone & Telegraph Co., phone service.....	9 79
May 15.	42.	To Mrs. Florence Rantin, Matron, salary.....	22 60
May 27.	43.	To J. T. McCaw, signature cut and printing.....	38 25
May 31.	44.	To Ernest Cooper, M. D., Supt., salary.....	125 00
May 31.	45.	To Mrs. Clara Wood, Matron, salary.....	27 40
May 31.	46.	To Wm. Adams, Mechanic, salary.....	25 00
May 31.	47.	To Wm. Williams, Cook, salary.....	22 50
May 31.	48.	To John Dinkins, Laborer, salary.....	8 25
May 31.	49.	To Arthur Boler, Waiter, salary.....	12 00
May 31.	50.	To The R. L. Bryan Co., printed and stamped envelopes.....	22 25
May 31.	51.	To West Disinfecting Co., Atlanta, Ga., paper napkins and towels.....	125 00
May 31.	52.	To Gulf Refining Co., Atlanta, Ga., gasoline.....	13 48
May 31.	53.	To Shepard's Chemical Co., Wilmington, N. C., fly guard and insect killer.....	4 00
May 31.	54.	To The Murray Drug Co., drugs.....	8 94
May 31.	55.	To Miss Annie Painter, Nurse, salary.....	50 00
June 1.	56.	To Southern Bell Telephone & Telegraph Co., phone service.....	10 14
June 7.	57.	To Standard Oil Co., Charlotte, N. C., gasoline.....	15 16
June 7.	58.	To Lorick & Lowrance, groceries.....	259 69
June 7.	59.	To Capital City Steam Laundry & Dye Works, laundry.....	30 98
June 30.	60.	To J. M. Elliott, furnishing material and erecting fence.....	348 00
June 31.	61.	To Ernest Cooper, M. D., Supt., salary.....	125 00
June 30.	62.	To Mrs. Clara Wood, Matron, salary.....	50 00



Voucher			
1916	No.		
June 30.	63.	To Miss Annie Painter, Nurse, salary.....	50 00
June 30.	64.	To Wm. Adams, Mechanic, salary.....	25 00
June 30.	65.	To Wm. Williams, Cook, salary.....	22 50
June 30.	66.	To John Denkins, Laborer, salary.....	15 00
June 30.	67.	To Allen House, Waiter, salary.....	12 00
June 30.	68.	To Gulf Refining Co., Atlanta, Ga., gasoline.....	16 45
July 13.	69.	To Standard Oil Co., Charlotte, N. C., gasoline.....	13 52
July 13.	70.	To The Murray Drug Co., drugs.....	2 25
July 13.	71.	To Lorick & Lowrance, groceries.....	182 48
July 13.	72.	To Turner Bros., canning outfit, etc.....	20 80
July 13.	73.	To Southern Bell Telephone & Telegraph Co., phone service.....	9 79
July 25.	74.	To S. T. Carter, State Treasurer, premium on Policy 568, insurance on property at State Park.....	214 35
July 25.	75.	To Miss Annie T. Painter, Nurse, laundry (May, June, July).....	9 00
July 31.	76.	To Ernest Cooper, M. D., Supt., salary.....	125 00
July 31.	77.	To Miss Annie Painter, Nurse, salary.....	50 00
July 31.	78.	To Mrs. Clara Wood, Matron, salary.....	50 00
July 31.	79.	To Wm. Adams, Mechanic, salary.....	25 00
July 31.	80.	To Wm. Williams, Cook, salary.....	22 50
July 31.	81.	To Heyward Anderson, salary.....	10 70
July 31.	82.	To John Denkins, Laborer, salary.....	10 20
July 31.	83.	To Turner Mobley, salary.....	2 85
July 31.	84.	To Capital City Steam Laundry & Dye Works, laundry.....	52 35
July 31.	85.	To The Murray Drug Co., drugs.....	16 21
July 31.	86.	To L. S. Mathias, eggs.....	6 00
July 31.	87.	To Standard Oil Co., Charlotte, N. C., gasoline.....	14 58
Aug. 25.	88.	To Lorick & Lowrance, groceries, etc.....	160 75
Aug. 25.	89.	To Southern Bell Telephone & Telegraph Co., phone service.....	9 79
Aug. 25.	90.	To Standard Oil Co., Charlotte, N. C., gasoline.....	21 04
Aug. 31.	91.	To Mrs. Clara Wood, Matron, salary.....	50 00
Aug. 31.	92.	To Wm. Adams, Mechanic, salary.....	25 00
Aug. 31.	93.	To Wm. Williams, Cook, salary.....	22 50
Aug. 31.	94.	To Miss Annie Painter, Nurse, salary.....	50 00
Aug. 31.	95.	To Ernest Cooper, M. D., Supt., salary.....	125 00
Aug. 31.	96.	To Heyward Anderson, salary.....	15 00
Aug. 31.	97.	To Turner Mobley, salary.....	11 00
Aug. 31.	98.	To Minerva Archie, Maid, salary.....	6 00
Sep. 1.	99.	To The State Co., printing letter heads.....	5 40
Sep. 1.	100.	To The Murray Drug Co., drugs.....	11 20
Sep. 1.	101.	To The Standard Oil Co., Charlotte, N. C., stand motor, gasoline and oil.....	20 18
Sep. 1.	102.	To The Surgical Selling Co., Atlanta, Ga., thermometers, etc.....	62 64
Sep. 13.	103.	To Lorick & Lowrance, groceries.....	282 12
Oct. 6.	104.	To Wm. Williams, Cook, salary.....	25 00
Oct. 6.	105.	To Wm. Adams, Mechanic, salary.....	25 00
Oct. 6.	106.	To Miss Annie Painter, Nurse, laundry.....	6 75
Oct. 6.	107.	To Miss Annie Painter, Nurse, salary.....	50 00
Oct. 6.	108.	To Mrs. Clara Wood, Matron, salary.....	50 00
Oct. 6.	109.	To Ernest Cooper, M. D., Supt., salary.....	125 00
Oct. 6.	110.	To Minerva Archie, Maid, salary.....	10 00
Oct. 6.	111.	To Johnson Belton, salary.....	15 00
Oct. 6.	112.	To Turner Mobley, salary.....	11 00
Oct. 13.	113.	To Capital City Steam Laundry & Dye Works, laundry.....	77 74
Oct. 13.	114.	To Southern Bell Telephone & Telegraph Co., phone service.....	21 05
Oct. 13.	115.	To Standard Oil Co., Charlotte, N. C., gasoline.....	28 28
Oct. 13.	116.	To J. T. McCaw, printing application blanks.....	8 50
Oct. 31.	117.	To Ernest Cooper, M. D., Supt., salary.....	125 00
Oct. 31.	118.	To Miss Annie Painter, Nurse, salary.....	50 00
Oct. 31.	119.	To Mrs. Clara Wood, Matron, salary.....	50 00
Oct. 31.	120.	To Wm. Adams, Mechanic, salary.....	25 00
Oct. 31.	121.	To Wm. Williams, Cook, salary.....	25 00
Oct. 31.	122.	To Johnson Belton, salary.....	17 50
Oct. 31.	123.	To Turner Mobley, salary.....	11 00
Oct. 31.	124.	To Minerva Archie, Maid, salary.....	10 00
Oct. 31.	125.	To Southern Bell Telephone & Telegraph Co., phone service.....	10 29
Nov. 1.	126.	To Capital City Steam & Dye Works, laundry service.....	34 48
Nov. 30.	127.	To Julia Watson, salary.....	10 00
Nov. 30.	128.	To Turner Mobley, salary.....	11 00
Nov. 30.	129.	To Johnson Belton, salary.....	20 00
Nov. 30.	130.	To Wm. Adams, Mechanic, salary.....	25 00
Nov. 30.	131.	To Wm. Williams, Cook, salary.....	25 00
Nov. 30.	132.	To Mrs. Clara Wood, Matron, salary.....	50 00
Nov. 30.	133.	To Miss Annie Painter, Nurse, salary.....	50 00
Nov. 30.	134.	To Ernest Cooper, M. D., Supt., salary.....	125 00
Nov. 30.	135.	To Miss Annie Painter, Nurse, laundry.....	6 75
Dec. 1.	136.	To Southern Bell Telephone & Telegraph Co., phone service.....	12 20
Dec. 19.	137.	To Capital City Steam Laundry & Dye Works, laundry service.....	40 83
Dec. 23.	138.	To Wm. Adams, Mechanic, salary.....	25 00
Dec. 23.	139.	To Wm. Williams, Cook, salary.....	25 00
Dec. 23.	140.	To Mrs. Clara Wood, Matron, salary.....	50 00

Voucher			
1916	No.		
Dec. 23.	141.	To Miss Annie Painter, Nurse, salary.....	50 00
Dec. 23.	142.	To Ernest Cooper, M. D., Supt., salary.....	125 00
Dec. 23.	143.	To Julia Watson, salary.....	10 00
Dec. 23.	144.	To Turner Mobley, salary.....	11 00
Dec. 23.	145.	To Johnson Belton, salary.....	20 00
1917.		(Bills contracted during 1916 and paid during 1917):	
Jan. 13.	146.	To Southern Bell Telephone & Telegraph Co., phone service.....	12 00
Jan. 13.	147.	To Capital City Steam Laundry & Dye Works, laundry service.....	33 93
Jan. 15.	148.	To Leaves Appeals.....	6 92
			<hr/> \$7,040 00
Appropriation .....			\$7,040 00
Expenditures .....			<hr/> 7,040 00

## TUBERCULOSIS CAMP. (THREE FREE BEDS FOR WOMEN).

Oct. 13.	1.	To Jas. A. Hayne, Treas., free beds.....	\$96 00
Oct. 20.	2.	To Jas. A. Hayne, Treas., free beds.....	227 55
Dec. 26.	3.	To Jas. A. Hayne, Treas., free beds.....	276 00
			<hr/> \$599 55
Appropriation .....			\$1,000 00
Expenditures .....			<hr/> 599 55
Balance .....			\$ 400 45
Outstanding Bills (?)			

## TUBERCULOSIS CAMP. (THREE FREE BEDS FOR MEN).

Mar. 31.	1.	To Jas. A. Hayne, Treas., free beds.....	\$270 00
June 30.	2.	To Jas. A. Hayne, Treas., free beds.....	243 00
Oct. 13.	3.	To Jas. A. Hayne, Treas., free beds.....	248 00
Dec. 26.	4.	To Jas. A. Hayne, Treas., free beds.....	239 00
			<hr/> \$1,000 00
Appropriation .....			\$1,000 00
Expenditures .....			<hr/> 1,000 00

## TUBERCULOSIS CAMP. (FEMALE WARD).

Mar. 31.	1.	To The Record Publishing Co., insertion of "ad".....	\$4 50
Mar. 31.	2.	To The State Co., insertion of "ad".....	4 12
Apr. 13.	3.	To Wilson & Sompayrac, first installment of five per cent. commissions—Ward 2.....	166 15
May 4.	4.	To The News and Courier, Charleston, insertion of "ad".....	4 00
June 17.	5.	To W. B. Guimarin & Co., contract for plumbing, sewerage and gas..	564 40
Aug. 1.	6.	To W. J. Baker Co., Newport, Ky., screens.....	144 45
Aug. 4.	7.	To Columbia Awning & Tent Mfg. Co., curtains.....	111 60
Aug. 4.	8.	To Wilson & Sompayrac, five per cent. commission for plans, specifications and supervision—Ward 2.....	71 20
Aug. 4.	9.	To Taylor-Waters Co., contractors, Ward 2.....	3,366 00
Aug. 25.	10.	To W. B. Guimarin & Co., plumbing and sewerage.....	235 60
Sep. 1.	11.	To Ostermoor & Co., New York, N. Y., mattresses and pillows.....	194 50
Sep. 1.	12.	To The Kalamazoo Sled Co., Kalamazoo, Mich., chairs.....	27 50
Sep. 1.	13.	To West Disinfecting Co., Atlanta, Ga., cooler and glass bottle.....	17 00
Sep. 8.	14.	To S. T. Carter, State Treas., premium on policy No. 570.....	67 99
			<hr/> \$4,979 01
Appropriation .....			\$5,000 00
Expenditures .....			<hr/> 4,979 01
Balance .....			\$ 20 99
Outstanding Bills (?)			

## SALARIES.

Jas. A. Hayne, M. D., State Health Officer:

1916.			
January—Salary .....			\$250 00
February—Salary .....			250 00
March—Salary .....			250 00
April—Salary .....			250 00



May—Salary .....	250 00
June—Salary .....	250 00
July—Salary .....	250 00
August—Salary .....	250 00
September—Salary .....	250 00
October—Salary .....	250 00
November—Salary .....	250 00
December—Salary .....	250 00

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 \$3,000 00

Appropriation for salary of State Health Officer.....\$3,000 00

## J. P. Tompkins, Clerk of State Health Officer:

1916.

January—Salary .....	\$60 00
February—Salary .....	60 00
March—Salary .....	60 00
April—Salary .....	60 00
May—Salary .....	60 00
June—Salary .....	60 00
July—Salary .....	60 00
August—Salary .....	60 00
September—Salary .....	60 00
October—Salary .....	60 00
November—Salary .....	60 00
December—Salary .....	60 00

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 \$720 00

Appropriation for salary of Clerk.....\$720 00

## F. A. Coward, M. D., Director State Board of Health Laboratory:

1916.

January—Salary .....	\$208 33
February—Salary .....	208 33
March—Salary .....	208 33
April—Salary .....	208 33
May—Salary .....	208 33
June—Salary .....	208 33
July—Salary .....	208 33
August—Salary .....	208 33
September—Salary .....	208 33
October—Salary .....	208 33
November—Salary .....	208 33
December—Salary .....	208 37

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 \$2,500 00

Appropriation for salary of Directory of Laboratory.....\$2,500 00

## Jas. R. Cain, Assistant Bacteriologist, State Board of Health Laboratory:

1916.

January—Salary .....	\$125 00
February—Salary .....	125 00
March—Salary .....	125 00
April—Salary .....	125 00
May—Salary .....	125 00
June—Salary .....	125 00
July—Salary .....	125 00
August—Salary .....	125 00
September—Salary .....	125 00
October—Salary .....	125 00

November—Salary .....	125 00
December—Salary .....	125 00

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 \$1,500 00

Appropriation for salary of Assistant Bacteriologist.....\$1,500 00

## John Roundtree, Janitor:

1916.

January—Salary .....	\$38 00
February—Salary .....	38 00
March—Salary .....	38 00
April—Salary .....	38 00
May—Salary .....	38 00
June—Salary .....	38 00
July—Salary .....	38 00
August—Salary .....	38 00
September—Salary .....	38 00
October—Salary .....	38 00
November—Salary .....	38 00
December—Salary .....	38 25

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 \$456 25

Appropriation for salary of Janitor.....\$456 25



